

**STATE OF HAWAI‘I**  
**MATERNAL &**  
**CHILD HEALTH**  
**NEEDS**  
**ASSESSMENT**

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**State of Hawai‘i**  
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## SUMMARY

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### Hawaii Maternal Child Health Priorities

Nine priority issues were identified through the Title V maternal and child health (MCH) needs assessment process. These priorities are to be the programmatic focus for the Family Health Services Division (FHSD), the state Title V MCH agency, in conjunction with many of our partnering organizations during the next five years (2005-2010). The 9 priorities for the state MCH population are:

1. Reduce the rate of unintended pregnancy (*continuing priority*)
2. Ensure that all infants and children receive appropriate and timely hearing evaluation and early intervention services (*continuing priority*)
3. Prevent overweight and obesity in children (*continuing priority*)
4. Improve the oral health of children (*continuing priority*)
5. Prevent underage drinking among adolescents
6. Reduce the rate of adolescent Chlamydia
7. Increase abstinence from alcohol use during pregnancy
8. Increase abstinence from smoking during pregnancy
9. Improve transition to adult life for youth with special health care needs

### Changes in Priorities Since the Last Needs Assessment

Five priority needs were dropped from the list of 10:

1. Ensure that all children 0-3 years who are developmentally delayed, or biologically or environmentally at-risk receive needed early intervention services;
2. Reduce family violence and child maltreatment;
3. Improve access to health care;
4. Assure that parenting support and information is made available to all families with children; and
5. Improve assessment and surveillance of MCH populations, including children with special health care needs.

The justification to drop these priorities varies. For the early intervention (EI) services priority, sufficient progress has been made as indicated by the performance measure for this priority; however, EI services will continue as a CSHNB priority to assure that progress is sustained and that necessary improvements are made to the EI system. There are several major initiatives underway to address violence prevention including plans to improve child abuse prevention and child welfare services, establishment of a statewide violence prevention coalition and a state special fund (financed by marriage license certificate fees) to assure continued support for domestic violence programs.

The priorities for access to care and parenting support were too global in scope to adequately address effectively. And, while building core public health capacity remains an important need, it is not unique to the maternal and child health agency, but a commitment for the entire Department of Health and public health profession. To make a measurable impact on the MCH priorities, core public health capacity must be developed and strengthened.

The 2000 priority to reduce adult and adolescent substance abuse continues to be an important concern for the state. The Lt. Governor issued a State Drug Control Plan in 2005 and substantial state and federal funds have been appropriated to combat substance use through prevention, treatment and law enforcement. To effectively address substance use in the MCH population, the priority need has been redescribed to target three specific problems:

- Prevent underage drinking among adolescents
- Increase abstinence from alcohol use during pregnancy
- Increase abstinence from smoking during pregnancy

The two new priorities in 2005 are:

- Reduce the rate of adolescent chlamydia
- Improve transition to adult life for youth with special health care needs (YSHCN)

These two priorities were selected because of quantitative and qualitative data that indicate these are critical needs. Hawaii maintains one of the highest adolescent Chlamydia rates in the U.S., however, there is little awareness in general about this health threat to Hawaii's youth.

Like much of the nation, state data shows transition services for YSHCN is an area for improvement for this population. Community meetings, focus groups with YSHCN families and providers confirm this finding.

Four priorities will continue from the previous 2000 needs assessment as noted on the previous page.

### **Summary of Needs Assessment Process**

Organizationally, the NA process was managed by a Steering Committee comprised of FHSD senior management to provide guidance, assure progress, and coordinate efforts between work groups. A work group was established for each of the three target populations: 1) Women and Infants (WI), 2) Child and Adolescent (CA), and 3) Children with Special Health Care Needs (CSHCN).

The needs assessment process involved several steps:

- Evaluation of previous needs assessment process and priorities
- Problem definition: identify preliminary list of health issues
- Prioritization: identify final list of priorities utilizing specific criteria scoring
- Problem Analysis: identify key goals, targeted behaviors, determinants/influencing factors, existing services & interventions using a logic model format
- Activities/Plan

Input from stakeholders was collected for all steps in the process using videoconferencing, email, telephone conference calls, community meetings, focus groups, coalition meetings and interviews. The process has helped to identify new stakeholders and improve working relationships with existing agency partners.

The CSHN work group was able to complete enough of the assessment to develop a plan and secure grant funding for the two CSHN priorities: hearing and transition services. The WI and CA work groups will continue to refine the problem analysis/logic models in conjunction with stakeholders and utilize the findings for future planning.

The Title V Steering Committee will continue to provide guidance to the ongoing needs assessment process to assure progress over the next five years because of limited numbers of staff available to work on the new priority issues.

## **INTRODUCTION**

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The efforts coordinated by the Hawaii Department of Health's Family Health Services Division (FHSD) in 2003-05 marks the beginning of the third health needs assessment for the maternal and child population. The assessment is the basis for priorities, objectives, and action plans for FHSD and other partner organizations. It is designed to provide factual information to guide activities and policies, to provide a tool for better decision making, and to be a point for discussions about health issues and continuing assessment efforts.

The needs assessment (NA) is a requirement of the federal Title V Maternal Child Health (MCH) Block Grant to assure state MCH agencies compile and review available data for programming and planning decisions.

### **Context of Assessment Project**

Public health in Hawaii including the Family Health Services Division (FHSD), continues to transition from direct services to the core public health functions. As public health funding for direct services shifts to the medical, educational, and social service community, the role of the FHSD program changes. In the context of this changing health care system, FHSD aims to build capacity to ensure statewide infrastructure building functions such as data collection, needs assessment, surveillance, planning and evaluation, systems development, monitoring, provision of workforce training, and assurance of quality care.

FHSD, the state Title V agency, spent considerable time and effort planning and implementing the Five-Year Needs Assessment process. As with the previous assessment, it was decided that Title V staff would conduct the assessment and utilize technical assistance resources. FHSD used this opportunity to assess the capacity of the staff, identify the core competencies and skills needed to conduct the assessment, compile and analyze data, work with stakeholders, develop leadership, and analyze the system of services. It became evident that FHSD has made progress in some of these areas, but continues to struggle given competing administrative demands, extensive training needs, limited technical assistance resources, and a rigid personnel system. While the Title V agency is committed to strengthening its capacity to perform core public health functions, it is challenged to sustain an organizational culture that supports such performance.

The experience has indeed helped to clarify the specific training needs of the MCH agency to ensure the transition to core public health practice.

## **NEEDS ASSESSMENT PROCESS**

### **Plan for the Needs Assessment (NA)**

Planning for the NA began in August 2003. Technical assistance for training, planning and evaluation of the process was secured with William Sappenfield, MCH Epi Program Team Leader, Division of Reproductive Health at the Centers for Disease Control and Prevention.

Video conference training was conducted on needs assessment with Dr. Sappenfield and 25 Title V staff in October 2003. The training was used to evaluate the 2000 NA process and begin designing the key parameters and components for the 2005 NA.

Two key findings were identified in the preliminary evaluation:



1. In the last NA virtually all the time and resources went into selecting the priority issues with extensive stakeholder input. Little effort was placed into developing a *problem analysis* and *planning*.

2. With the exception of the two Children with Special Needs priorities, the remaining priority needs were very global and general, a reflection of collapsing many issues into one priority. This made it difficult for the Title V agency to effectively address the priorities and ensure improved health outcomes for the MCH population.

In January 2004 the Title V agency hosted Dr. Sappenfield in a one-day Kick-Off event with over 35 staff members to develop a plan for the NA. A general timeline and process was identified for the NA work over the next 1.5 years.

### **Population Work Groups/Steering Committee**

A needs assessment work group was established for each of the three target populations: 1) Women and Infants (WI), 2) Child and Adolescent (CA), and 3) Children with Special Health Care Needs (CSHCN). The work groups included participation from public and private stakeholders including parents. Videoconferencing, email, and telephone conference calls were used to insure broad input from across the state.

The Title V agency also formed a NA Steering Committee comprised of senior management for the Title V agency to provide guidance, assure progress, and coordinate efforts between the work groups.

### **Evaluation of Current Priorities**

The work groups began the NA in March 2004 by evaluating the progress made on the current MCH priorities generated from the 2000 NA. Based on information from the annual Title V MCH Block grant reports and some additional research, each work group decided which priorities had made sufficient progress and could be dropped from further consideration as a priority health issue and which issues could continue to be considered priorities.

### **Problem Definition**

Along with continuing health priority issues, the WI and CA work groups reviewed prevalence data and secured extensive input from MCH stakeholders to identify 5 general health topics of greatest concern for each population group. Stakeholder input was collected through key informant interviews and discussions at various coalition meetings.

The CSHN Work Group planned and conducted a statewide conference in June 2004 to get input on the 6 national CSHN outcomes which framed the issues for this population in the NA. Participants included families, pediatricians, and key state and community agencies and organizations. Additional focus groups and community meetings were conducted on the neighbor islands. The process was facilitated by a consultant from Hawaii Family Voices working with CSHN Branch, AAP-Hawaii Chapter, and the University of Hawaii/School of Medicine/Department of Pediatrics.

### **Prioritization**

A formal method for prioritizing health issues was developed to identify a minimum of 5 priorities for each population group (see Appendix 1-A). The Work Groups developed issue papers using the prioritization criteria

for presentation before the NA Steering Committee. The Steering Committee used the prioritization scoring to select 10 priority issues from a list of 12.

## **Problem Analysis**

The problem analysis is a new step in the 2005 NA process. The purpose of the problem analysis is to develop a better understanding of the nature of the priority health issues based on research, by identifying the factors/determinants that impact the health issue and deciding which factors are most important to address and can be changed through strategies/programs. The problem analysis is conducted in conjunction with stakeholders, to assure there is a common understanding of the problem that serves as a basis for collaborative planning.

The Title V agency used a problem analysis model developed by The Family Health Outcomes Project at the University of California San Francisco, "Conducting a Formal Problem Analysis," to begin identifying key factors (See Appendix 1-B for Generic Framework for Health Problem Analysis). Technical assistance was secured from the University of Hawaii Department of Public Health Sciences and Epidemiology to help staff understand and work with the model.

Input for the problem analysis was secured from a statewide stakeholder meeting held in October 2004 that included additional data sources, research, and key interventions. CSHN also used qualitative data collected through their statewide conference and subsequent focus groups and community meetings conducted on the neighbor islands.

## **Logic Model**

Developing an understanding of the current service system was also a key component of the problem analysis. Information from stakeholders was gathered on existing programs and interventions from the statewide NA meetings and through interviews with key stakeholders.

To compile the problem analysis information in a user-friendly format, the Behavior, Determinants and Interventions (BDI) logic model was used. The model was developed by Douglas Kirby of ETR Associates.<sup>1</sup> A simple example of a BDI logic model can be found in Appendix 1-C. Although, the model is generally used to design program interventions, it is being adapted to describe and assess the existing system of services to address each priority health issue. Logic models for each of the priority health issues can be found in Appendix 1-D.

## **Data Collection**

### *Title V Data*

Data was collected for the MCH Title V Block Grant needs assessment that included data on Title V measures and indicators described in the grant guidance. The project collaborated with the Department of Health's Office of Health Status Monitoring (OHSM) that collects the state vital statistics, and funded questions on OHSM's annual Hawaii Health Survey (HHS) to collect population-based health insurance data. Insurance and demographic data from HHS assisted in fulfilling Title V data requirements. The Hawaii Health Information

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<sup>1</sup> For more information on the BDI logic model go to [www.etr.org/recapreview/logicmodelcourse/](http://www.etr.org/recapreview/logicmodelcourse/).

Corporation was contracted to provide hospital discharge data on asthma. There was some difficulty securing data from the state Medicaid program but other agency data from WIC, Food Stamps, and TANF was available.

#### Primary Data Sources: Surveys

The WI and CA Work Groups conducted 2 written surveys of stakeholders to identify priority health issues. One survey was conducted at the 2004 state Perinatal Summit. Several hundred participants were asked to identify and rank the most important issues facing women and infants in the state.

The CA Work Group sent out an electronic survey to over 200 stakeholders statewide. Again, participants were asked to identify and rank the most important issues facing children and adolescents in the state. Based on these findings, priority health issues were identified for each population group.

CSHN used community meetings and focus groups around the state from June-August 2004 to identify needs, and strategies that were used to develop an action plan.

#### National Surveys

Data from the National Child Health Survey was available in early 2005, but came out too late for use in the prioritization. However, it is included in the current assessment report. The data is currently being reviewed and analyzed to identify significant findings.

The Hawaii data from the National Survey Children with Special Health Care Needs (2001) and the National Survey of Children's Health (2003) have been used in the Chapter on CSHN.

#### Other secondary source data

The assessment required FHSD to collect and analyze a variety of both state and national level research and secondary data to support the description of health status, service needs and system capacities. Data collection continued throughout the needs assessment process. The research helped support the findings of the prioritization process and supplemented the information presented in the issue papers.

#### Data in this Report

The data presented in this report is not a comprehensive compilation of all MCH sources, but merely a summary of key data reviewed to assess overall MCH population health. As the needs assessment work continues over the next 5 years additional data review and analysis will be conducted to further understanding of the population's health and develop strategies to improve MCH health in the state.

### **Hawaii Maternal Child Health Priorities**

Ten priorities were identified through the needs assessment process. However, the NA Steering Committee reduced the number to nine based on input from the stakeholders and limited staff time to address ten priorities.

These nine priorities are to be the programmatic focus areas for FHSD in conjunction with many of our partnering organizations during the next five years (2005-2010). The nine priority issues for the State MCH population are:

1. Reduce the rate of unintended pregnancy
2. Ensure that all infants and children receive appropriate and timely hearing evaluation and early intervention services.
3. Prevent overweight and obesity in children

4. Prevent underage drinking among adolescents
5. Improve the oral health of children
6. Reduce the rate of adolescent Chlamydia
7. Increase abstinence from alcohol use during pregnancy
8. Increase abstinence from smoking during pregnancy
9. Improve transition to adult life for youth with special health care needs

### **On-Going Assessment**

For the WI and CY issues, work will continue with stakeholders to refine the problem analysis. The comprehensive list of determinants and factors will be refined to a list of key determinants which can be feasibly addressed over the next 5 years. This will be done in conjunction with stakeholders.

More detailed information on program effectiveness will be compiled to identify evidence based practices locally. Research will also continue to identify evidence base practices in the literature. Using the BDI logic model, the information will be used to analyze the service system and strategically plan with stakeholders.

With technical assistance, the data contained in this report will be further analyzed to strengthen the problem analysis for the priority health issues.

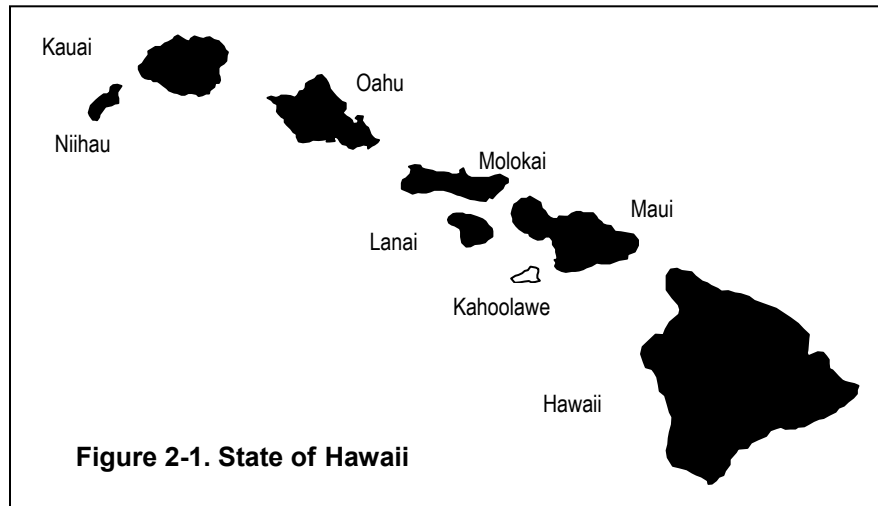
The CSHN Work Group have completed analysis and planning for their priority health issues and have received grant funding for their priorities. Work will begin on implementation of their plans. Needs assessment is ongoing and will be conducted for specific areas as needed.

Activities and progress made to address these MCH issues will be documented in future Title V Block grant reports.

## OVERVIEW OF THE STATE OF HAWAII

### Population and Ethnic Diversity

The State of Hawaii is composed of seven inhabited islands within four major counties, amounting to 6,423 square miles of land area with an estimated total population of 1.2 million in 2004. Figure 1 shows a layout of the islands.



The City and County of Honolulu encompasses the entire island of Oahu and contains the majority of the population (71.2% of state residents). Honolulu is considered the only urbanized area in the state. The neighbor island counties are Hawaii, Kauai (includes Niihau island), and Maui (includes Molokai, Lanai and Kahoolawe). Together, the neighboring counties represent only 28.8 % of the State's total population. Refer to Table 2-1 for a summary of the population distribution for the state by county.

Table 2-1. Summary of State and County Population Distribution: 2004.								
Hawaii		Honolulu		Kauai		Maui		State Total
No.	%	No.	%	No.	%	No.	%	
162,971	12.9%	899,593	71.2%	61,929	4.9%	138,347	11.0%	1,262,840
Source: Source: U.S. Bureau of the Census. 1990 Census. 2000 Census. Population Estimates Branch.								

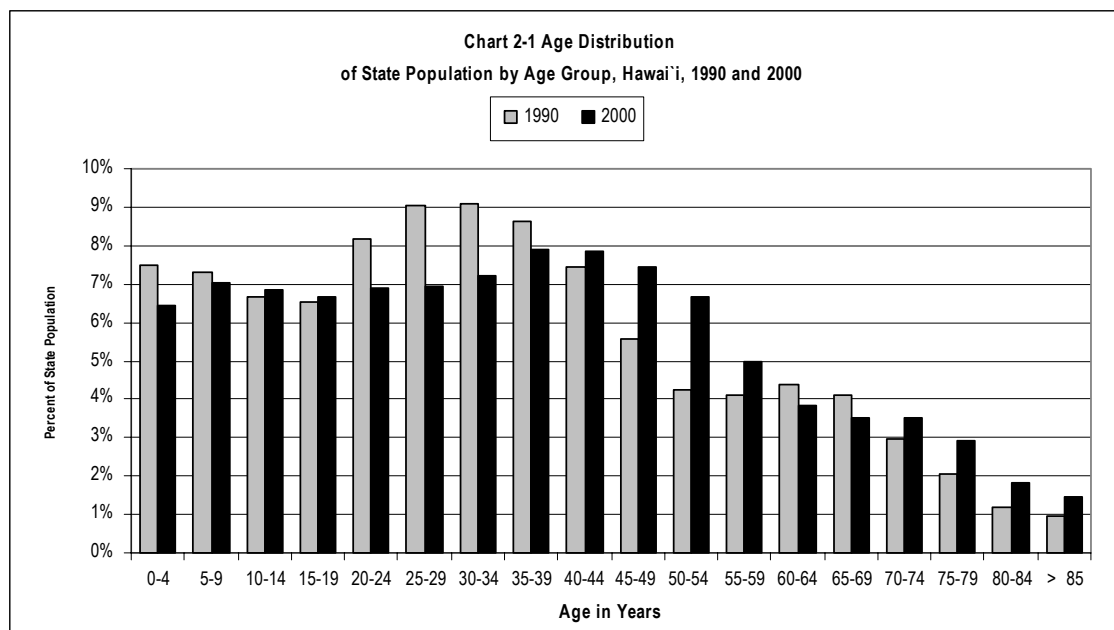
Overall, the state grew by 12% between 1990 and 2002 with an annual growth rate of 1.1% from 2002. The 2000 Census revealed a new trend of double-digit growth on the neighbor islands reversing a decades long trend of the neighbor islands losing population to Honolulu. Maui County experienced the largest growth between 1990 and 2002, a 34% increase, followed by Hawaii County (29%) and Kauai County (17%). Honolulu experienced a 7% increase over the same time period.

Since 2002, Hawaii County became the fastest growing neighbor island with an annual growth rate of 2.6%, followed by Maui (1.8%), Kauai (1.6%) and Honolulu (0.8%).

Hawaii's population, like the nation as a whole is aging. The median age of the population has increased from 32.5 years in 1990 to 36.2 years in 2000, higher than the national average of 35.3. The trend toward an aging population is displayed in Table 2-2 through a comparison of the age distribution between 1990 and 2000. There were increases in the proportion of all age groups higher than 34 years old, while the proportion of children and youth age 0-19 years and younger adults 19-34 years decreased. The largest increase was among the elderly, those 75 years and older, representing a 30% increase from 1990.

<b>Ages</b>	<b>1990</b>	<b>% of Total</b>	<b>2000</b>	<b>% of Total</b>
0-19 years	310,517	28.0%	327,251	27.0%
19-34 years	291,490	26.3%	254,568	21.0%
35-54 years	287,114	25.9%	362,156	29.9%
55-74 years	172,756	15.6%	192,223	15.9%
75 + years	46,352	4.2%	75,339	6.2%
Median age	32.5 years	*****	36.2 years	*****
Source: U.S. Bureau of the Census, 1990 Census of Population, General Population Characteristics, Hawaii, 1990 CP-1-13 (June 1992), table 17; U.S. Census Bureau, Census 2000 Summary File 1 Hawaii (July 25, 2001).				

A graphic representation of the age distribution estimates for 1990 and 2000 is presented in Chart 2-1.<sup>2</sup> The proportion of older age groups is generally higher after age 44 in 2000 (except for those age 60-69), while the number of younger adults 20 to 39 years of age has decreased in 2000.



<sup>2</sup> Hawaii State Department of Business, Economic Development & Tourism, *State of Hawaii Data Book 2002*. Honolulu, 2002. <http://www.hawaii.gov/dbedt/>

Like the nation, there are slightly more women than men living in Hawaii. This is due largely to women's longer life expectancy (75.9 years for men compared to 82.06 years for women).<sup>3</sup> The average life expectancy in Hawaii is greater than the U.S. overall (78.8 years in Hawaii compared to 75.4 years for the U.S.).<sup>4</sup>

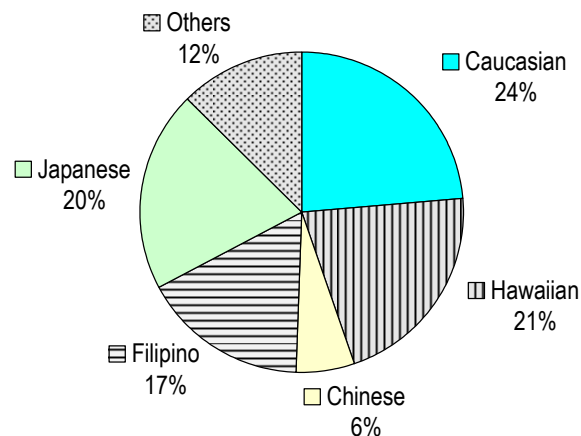
Like the rest of the U.S, Hawaii's birth rate declined between 1990 and 2001 from 19 births per 1,000 residents to 14.<sup>5</sup> This is due in part to fewer women of child-bearing age (15-44 years), a preference for fewer children, and increasing delays in child bearing. Over the past decade, Hawaii has had consistently lower crude death rates than the rest of the U.S., although the gap is slowly narrowing. In 2001, Hawaii's death rate was 21% lower than the U.S. (Hawaii: 673 per 100,000 population; U.S.: 847 per 100,000 population).<sup>6</sup>

Hawaii's racial/ethnic composition is unique in the U.S. The state population is very diverse with no one racial/ethnic group emerging as the majority. The largest ethnic groups in descending order Caucasian, Native Hawaiian, Japanese, and Filipino. Combined, the four ethnic groups comprise approximately 82% of the State's total population.

The state's indigenous population of Native Hawaiians are descendents of the original inhabitants that settled the islands in 300AD. Prior to Western contact, Hawaiians developed a vibrant, sophisticated culture and a stable land tenure system that supported an estimated population of 1,000,000 people. Over 200 years of western colonization have left Hawaii's indigenous population with some of the poorest statistics for health and mortality.

Chart 2-2 provides an overview of the ethnic composition of the State.<sup>7</sup> The Other category is composed of groups whose numbers are very small and a growing category of those with mixed race/ethnicity.

**Chart 2-2 Ethnic Distribution for the State of Hawaii: 2003**



<sup>3</sup> Hawaii State Department of Business, Economic Development & Tourism, *State of Hawaii Data Book 2002*. Honolulu, 2002. Table 2-10 <http://www.hawaii.gov/dbedt/>

<sup>4</sup> *Ibid*, Table 2-11.

<sup>5</sup> HMSA Foundation, *Health Trends in Hawaii, 64<sup>th</sup> Edition*. Honolulu: HMSA Foundation, 2003. p. 10

<sup>6</sup> *Ibid*, p. 10

<sup>7</sup> Office of Health Status Monitoring, Hawaii State Department of Health, *Hawaii Health Survey, 2003*. Unlike the U.S. Census where respondents self-select race/ethnicity, the Hawaii Health Survey asks for the racial background of parents in order to determine a respondent's category.

The racial categories typically utilized at the national level are not useful for the state in tracking disparities. African-Americans and Hispanics are large minority groups within much of the U.S., but are small groups within the state. However, Asian, Native Hawaiian, and Pacific Islander groups comprise most of the state population but are so small at the national level the groups are combined into one broad category.

Intermarriage is common in Hawaii and many individuals claim multiple ethnic identification. The local culture tends to celebrate the presence of multiple ethnicities making assignment to any one category difficult as individuals are reluctant to choose a single category and may change their identification over time and under certain circumstances. In the 2000 Census more than 20% of Hawaii residents reported being multi-ethnic/racial categories compared to 2.4% for the nation. As the trend toward multiple ethnicities increases, tracking the population by single ethnic categories will become more problematic.

The health among race/ethnic groups in Hawaii varies considerably for the majority of health indicators. However, the overall pattern of health within the state is that the Japanese and Chinese populations often engage in more protective behaviors and experience lower rates of disease and death compared to Whites, Filipinos and particularly Native Hawaiians.<sup>8</sup>

In addition to the ethnic diversity in the State, there are many sub-populations that impact the economy and health care systems. The presence of the U.S. Armed Forces has been well established in Hawaii but decreased in the 1990s. The 2000 U.S. Census Bureau estimates indicate the Armed Forces (both military members and their dependents), comprised 6.8% of the total resident population of the State, a drop from 10.6% in 1990.

The State immigrant population is comprised primarily of Southeast Asian and Pacific-Island nationals. Foreign-born people make up 17.5% of Hawaii's 1.2 million population - one of the largest proportions in the nation, according to 2003 census estimates. Nearly 30,000 immigrants were legally admitted to the state between 1998 and 2002. Hawaii immigrants come mainly from Asia and the Pacific, primarily from the Philippines, the former trust territories in the Pacific and, to a lesser extent, China and Korea.

Smaller groups of Hispanic immigrants (an estimated at 30,000, including those here illegally), have settled in parts of Maui and the Big Island, attracted by jobs in tourism and agriculture. Estimates of illegal immigrants in Hawaii range from 6,000 to 9000, a relatively small proportion compared to other states where access through U.S. borders are much easier.<sup>9</sup>

## **Geographic Characteristics and Economy**

The geographic distances between islands are considered immense and are one of the challenging and unique aspects of the State of Hawaii. The four major counties in the State of Hawaii are comprised of seven major islands where the vast majority of the population resides.

### Oahu

The island of Oahu comprises all of Honolulu County. It is only 608 square miles but accounts for approximately 71% of the total population. There are four main geologic provinces, which influence its

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<sup>8</sup> Hawaii Outcomes Institute, *Toward a Healthy Hawaii 2010*. Honolulu, 2005. p. 15. Report is available on [www.hawaiioutcomes.org](http://www.hawaiioutcomes.org). The report presents ethnic comparison data for the major HP 2010 objectives for the state.

<sup>9</sup> Yasmin Anwar, "Immigration: Little Room for Leniency," *Honolulu Advertiser*, February 23, 2001, p A14.



population structure and impact accessibility to services. There are two mountain ranges, a central plateau, and a coastal plain.

Oahu also contains the capital city of Honolulu, the only major urban center in the State. It is the primary center for tourism (the dominant industry for the State) as well as the majority of other economic activity shaping Hawaii's economy such as heavy industry, shipping, retailing, and the U.S. military. There is also a small, diversified agriculture industry, the remnants of a once viable plantation agricultural industry. Oahu has an extensive roadway system that connects the major sections of the island and encompasses most of the perimeter of the island. There is also an excellent public bus system, which provides service to most of the island.<sup>10</sup>

### Hawaii

The island of Hawaii, also known as the Big Island, is the only island comprising Hawaii County. It is the farthest west of all of the inhabited islands. The primary urban area is Hilo, which also serves as the county seat. Hilo has a resident population of approximately 47,386 people. Located on the opposite side of the island from Hilo, Kailua-Kona has grown rapidly to 37,132 residents.

Hawaii is the largest of all the islands with an area of 4,039 square miles and contains two large volcanic mountain peaks which reach elevations 3,000 feet higher than any neighboring islands. Of the five total volcanic mountains on the island, two occupy approximately 73% of the entire land mass, one of which, Mauna Loa, remains active. The other active volcano is Kilauea. The economy is driven primarily by tourism and diversified agriculture, such as papaya, macadamia nuts, Kona coffee, and flower exports. There are large land areas owned by the U.S. Armed Forces; however, this area is used primarily for training with essentially no year long residents.

The Big Island has a limited roadway system developed largely along the perimeter of the island. This is primarily due to the extensive land areas occupied by the volcanoes. Only one road dissects the island and is considered relatively unsafe due to climactic changes at various altitudes combined with limited maintenance. The mass transit system is also limited with respect to bus service connecting Hilo with Kailua-Kona. Limited bus systems exist within each community; however connecting service is infrequent. Both communities contain airports with connecting service to neighboring islands.

### Maui County

Maui County is comprised of four islands, Maui, Molokai, Lanai, and Kahoolawe. The island of Maui is the second largest in terms of land mass but is still significantly smaller than Hawaii island with 729 square miles. Molokai is only 261 square miles and located south of Maui island. Lanai lies directly south of Molokai and is 140 square miles. Kahoolawe, the smallest of the islands, is uninhabited.

### Maui

Maui consists of two large volcanic mountains, one being extinct and the other, Haleakala, considered dormant. Maui's economy is solely based on tourism and agriculture. It is the only island that still grows sugar

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<sup>10</sup> Geographic information about Hawaii largely from Sonia P. Juvick & James O Juvick, Ed. *Atlas of Hawaii* (Honolulu: University of Hawaii Press, 1998). Census data from Hawaii State Department of Business, Economic Development & Tourism, *State of Hawaii Data Book 2002. Honolulu, 2002.* <http://www.hawaii.gov/dbedt/>

and pineapple in the State, although both industries are relatively small. The remaining agriculture is heavily diversified. There are large cattle ranches, onion and potato farms, and flower exports. There are no military installations nor is there military land use.

The entire population of Maui County is approximately 138,347, with the majority living on Maui island. The city of Wailuku is the county seat and has a population of approximately 12,525. The larger commercial center of Kahului contains approximately 20,134 people and is the location for the principal harbor and airport. The center for tourism is located in Kihei, with approximately 16,264 residents. The fourth largest town is Lahaina with approximately 9,201 people is Maui's second major tourism center.

#### Molokai

The island of Molokai is predominantly rural and has a large population of Native Hawaiians. Physically, it contains two volcanic mountains with its population of approximately 7,257 living in all habitable parts of the island. Since the closing of the pineapple plantations in the early 1980's, Molokai has experienced little economic development, thus the island has extremely high unemployment. Tourism has been floundering. Cattle ranching and diversified agriculture continue as the viable economic activities. To supplement incomes, many families on Molokai rely on subsistence activities like fishing and small-scale farming. The Department of Hawaiian Home Lands and the island's major private landowner, Molokai Ranch, have large landholdings in central and west Molokai. It has one small airport with service to neighboring islands.

#### Lanai

Finally, the island of Lanai has a population of roughly 6386 residents. The island had been dominated by a plantation economy with 98% of the island formerly owned by the Castle and Cook company which cultivated pineapple. Over the past decade the plantation has closed and is under new corporate ownership. Recently, Lanai's primary economic activity has focused around two new luxury resort hotels. Lanai has a small airport providing service to Honolulu, Maui, and Molokai.

#### Kauai

Kauai County is comprised of the island of Kauai and Niihau. Kauai is 72 miles to the Northeast from Oahu and is 553 square miles. It is considered the oldest of the islands and is known for its single volcanic mountain in the center of the island. Mt. Waialeale, the mountain peak is estimated to receive more rainfall than any place in the world. Residents number approximately 58,463 with the population center in the town of Lihue. The population is ethnically diverse and includes pockets of immigrant groups that pose cultural and linguistic barriers to services. Lihue is also the site of the island's airport. There is limited transportation services on the island, thus access to primary commercial areas is difficult. With the continued closing of large plantations in the past decade, the primary industry remains tourism, military land use, and diversified agriculture.

#### Niihau

The island of Niihau is quite unique compared to the other islands in the State because the entire island is privately owned. The owners prohibit visits by outsiders (including Hawaii residents) unless the local inhabitants specifically invite them. It is 73 square miles and lies southeast of Kauai by only 17 miles. Since 1864, there has been no infrastructure development on the island. There is no island-wide electricity system, no paved roads, no firearms, no police force, and no medical provider. The small population of approximately

160 is largely 100% Hawaiian (a rarity in the rest of the state) and is the last remaining community of native speakers of the Hawaiian language, although English is taught in the one school on the island. The economy is self-sustaining on exported crops of yams, turkey, charcoal, and honey. Many of the residents must travel by barge (3-4 hours travel time) to access health care. There is a small air tour service that is now in operation.

### **Implications for Health Service Delivery**

As the most populated and urbanized island, Oahu (Honolulu county) is the home to the majority of tertiary health care facilities, most of the specialty and subspecialty care, and the one perinatal Level III facility in the state. For the 28.8% of the population residing on the Neighbor Islands, access to health care on the island of Oahu is a financial hardship. The average round-trip airfare is \$200 with added costs for food, possibly lodging, and local transportation. This hardship is compounded for those neighbor island residents who do not live within a reasonable distance of their local airports. Most of the Neighbor islands have underdeveloped roadways and limited, if any, public transportation or mass transit systems.

Emergency care for trauma and critical pediatrics must use the state's system for emergency medical air transport that consists of only one private company providing fixed wing air ambulance. Economic constraints have precluded providing consistent rapid transport to tertiary care for neighbor island residents putting them at risk for poor outcomes compared to urban residents.

### **Economy**

Hawaii is enjoying its strongest economy since the early 1990s, driven largely by active real estate, construction and tourism sectors. Hawaii's heavily dependent tourism economy was devastated by the 2001 U.S. terrorist attacks, the SARS (Severe Acute Respiratory Syndrome) outbreak in China, and initiation of the Iraq war.

Overall, Hawaii's economy continues to hinge on visitor arrival growth. In 2004 the state hit a near record high of 6.9 million visitors. The state's unemployment rate of 2.7 percent reported for May 2005 is the lowest in 14 years and the lowest in the nation. Hawaii experienced job growth of 2.6% or 14,800 jobs in 2004. Real personal income rose 2.6% and has grown by 2.9% in the first quarter of 2005 (a 6.9% increase from a year earlier). Bankruptcy filings have also declined by 14%.

General fund revenues for the first 10 months of the state fiscal year are running 14.6% ahead of the previous year according to the state tax office in May 2005. General excise tax collections, the largest category of collections, were up 10%, the hotel room tax collections were up 7.9% and individual tax collections were up 15.8%. All of the economic indicators are pointing to a robust economy.

### Income

The average per capita income in Hawaii is below the U.S. average. In 2003 the per capita income for Hawaii was \$30,441 compared to \$31,632 for the U.S.<sup>11</sup> This does not take into account the higher cost of living. The latest available per capita income data by county is for 2003 (Table 2-3). Honolulu exceeds the state

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<sup>11</sup> Hawaii State, Department of Business, Economic Development and Tourism, State Data Book 2003 Update. Table 13-09.

average while the neighbor island counties fall below the average. Hawaii county has the lowest per capita income for the state.

<b>Table 2-3. Per Capita Income by County, Hawaii, 2003</b>				
<b>Hawaii</b>	<b>Honolulu</b>	<b>Kauai</b>	<b>Maui</b>	<b>State</b>
\$23,500	\$32,463	\$25,838	\$27,310	\$30,441
Source: Hawaii State, Department of Business, Economic Development and Tourism, State Data Book 2003 Update. Table 13-09.				

The average median household income in 2004 for Hawaii was higher than the U.S. average (\$48,299 for Hawaii versus \$42,764 for the U.S.).<sup>12</sup> This reflects Hawaii's higher cost of living. Since 2000 the U.S. median household income has stayed relatively flat, dropping 2.5%, while Hawaii's median household income dropped by 10.3%.<sup>13</sup>

The latest available county data for median household income is 2002 (Table 2-4).<sup>14</sup> Again Honolulu maintains the highest median household income, exceeding the state average, while the neighbor islands fall below the state average. Hawaii county has the lowest average for the state.

<b>Table 2-4. Estimated Median Household Income by County, Hawaii, 2002</b>				
<b>Hawaii</b>	<b>Honolulu</b>	<b>Kauai</b>	<b>Maui</b>	<b>State</b>
\$38,371	\$49,449	\$41,966	\$46,186	\$47,424
Source: Hawaii State, Department of Business, Economic Development and Tourism, State Data Book 2003, 2003 Update. Table 13-17.				

In Hawaii, higher household incomes are usually associated with increased age, with income levels falling among people age 65 and over. The income distribution between male and female is similar. Income levels vary according to race/ethnicity, with the Japanese, Chinese, and Caucasians being more likely to earn higher incomes.<sup>15</sup>

### Poverty

Based on state data, 11.9% or 145,451 people in Hawaii have incomes below the federal poverty level (see Table 2-5). About 28.4% or 336,681 people had incomes below 200% of the poverty level. According to U.S. Census estimates, Hawaii's poverty rate ranks 28<sup>th</sup> among the 50 states. Over the past 3 years, the state's poverty rates have continued to increase slowly.

<sup>12</sup> Ibid., Table 13.15.

<sup>13</sup> Ibid.

<sup>14</sup> Data for this measure differs from estimates developed for U.S. and Hawaii comparison.

<sup>15</sup> Hawaii Outcomes Institute, Toward a Healthy Hawaii 2010. Honolulu, 2005. p. 16. Report is available on [www.hawaiioutcomes.org](http://www.hawaiioutcomes.org).

<b>Table 2-5: Residents in Poverty, Hawaii, 2003</b>		
<b>Poverty Level</b>	<b>Percent in Poverty</b>	<b>Number in Poverty</b>
Percent Below: 50% of poverty	3.7%	45,224
100% of poverty	11.9%	145,451
200% of poverty	32.4%	396,019
Total Population		1,222,281
Source: Hawaii State. Department of Health. Office of Health Status Monitoring. Health Surveys & Disease Registry. Hawaii Health Survey, 2003.		

Hawaii County continues to have the greatest proportion of its population in poverty (17.5%), followed by Maui (12.3%), Kauai (11.3%) and lastly Honolulu at (10.9%). At the 200% poverty level, the disparity by county is more pronounced: Hawaii County (44.4%), followed by Kauai (36.9%), Maui (34.3%) and Honolulu (29.7%).

The recent signs of economic recovery may be reflected in future income and poverty statistics.

#### Unemployment

Whether people are employed and working more than one job can have an effect on health status. Different types and amount of employment determine insurance coverage, access to care, variations in income, stress and fatigue, occupational risks, and time to devote to family, exercise and preparing healthy foods.

Unemployment in the State varies by county. Table 2-6 summarizes the civilian labor force and rates of unemployment by county. Hawaii county has highest unemployment rate in the state, almost double the unemployment rate as Honolulu county.

<b>Table 2-6. Summary of Civilian Labor Force and Unemployment by County, Hawaii, 2003</b>				
<b>County</b>	<b>Civilian Labor Force</b>	<b>% of the State Total</b>	<b>Unemployed</b>	<b>% of the County Total</b>
Honolulu	423,500	71.1%	15,900	3.8%
Hawaii	70,100	11.8%	4,650	6.6%
Kauai	29,400	4.9%	1,900	6.5%
Maui	72,400	12.2%	3,050	4.2%
Total <sup>a</sup>	595,400		25,500	
Source: Hawaii State, Department of Business, Economic Development and Tourism, State Data Book 2003. Table 12-07.				

Hawaii has a large percentage of workers who hold multiple jobs. In 2002 Hawaii ranked 8th in the U.S. for the percentage of workers with multiple jobs, 8% compared to the national average of 5.3%.<sup>16</sup> The rate of workers holding multiple jobs in the state slowly increases with age until the 35-44 age category, then begins

<sup>16</sup> Hawaii State, Department of Business, Economic Development and Tourism, State Data Book 2003 Update. Table 12-19.

to gradually decrease. The proportion of individuals with multiple jobs does not vary by significantly by sex. Variations by race/ethnicity are also minimal, with the exception of the Japanese, who are less likely to have more than one job.

## MATERNAL AND CHILD HEALTH POPULATION OVERVIEW

### MCH Population

This section provides an overview of the MCH population and its subgroups for the State. Following this section, the MCH population will be discussed in more detail, specifically, women and infants, children and adolescents, and children with special health care needs.

In 2003 the total estimate for women of childbearing age, infants, children and adolescents was 542,726 roughly 43% of the entire State population. Based on estimates of the Title V target groups, a summary of the MCH population is provided in Table 2-7. As shown in the table over the past ten years, the percentage of children has dropped slightly, but the percentage of women 15-44 has shown a more substantial decline. This may reflect the aging population trend in the state. The median age for women has increased from 33.6 years in 1990 to 37.4 years in 2000.

In 2003, children aged 1-19 comprised 28.3% of the total U.S. population, which is slightly more than the State for the same year (25%). The proportion of children in the state dropped by 1.6% since 1990.

<b>Table 2-7. Maternal and Child Health Target Populations, 1990 &amp; 2003</b>				
<b>Group</b>	<b>1990</b>	<b>% of Total Population</b>	<b>2003</b>	<b>% of Total Population</b>
<b>Total Population All Ages &amp; Gender<sup>a</sup></b>	1,108,229	100%	1,258,608	100.0%
<b>MCH Population<sup>b</sup></b>	534,409	48.2%	542,726	43.1%
<b>MCH Subgroups</b>				
Women in Childbearing Age (15-44 years) <sup>a</sup>	258,678	23.3%	250,610	19.9%
Median age (total female population) <sup>a</sup>	33.6 yrs	—	38.9 yrs	—
Live Births (residents)	20,438	1.8%	18,058	1.4%
Pregnancies (residents)	26,834	2.4%	22,500	1.8%
Infants (< 1 year of age) <sup>a</sup>	15,382	1.4%	18,514	1.5%
Children & Adolescents (1-19 years) <sup>a</sup>	295,135	26.6%	314,916	25.0%
Children with Special Health Care Needs <sup>c</sup>	N/A	N/A	30,627	2.4%
Source:				
<sup>a</sup> U.S. Bureau of the Census. 1990 Census. 2000 Census. Population Estimates Branch.				
<sup>b</sup> Hawaii State. Department of Health, Office of Health Status Monitoring, Vital Statistics Data.				
<sup>c</sup> U.S. Department of Health and Human Services. CSHCN Survey.				

A 12% growth in the state population since 1990 means the actual number of women and child has actually increased over the decade. Thus, based on the size of the MCH population, the need for services may have actually increased.

## Geographic Distribution and Racial/Ethnic Composition

The state's unique geography and ethnic/racial composition, relative to the continental U.S., is reflected in the maternal and child health population. The four state counties are comprised of 7 major islands where the majority of the population resides. The distances between islands, the locations of the tertiary and local primary-care centers, ethnic composition, and cultural and language barriers in the state contribute to both the success and difficulty Hawaii has encountered in meeting the needs of its residents.

Geographically, the distribution of ages is similar in all counties although Hawaii and Kauai counties had the highest percentage of children under 18 years. This is significant because both counties are two of the least populated in the state and are both rural areas. With the exception of Oahu, the most populous island, all of the counties demonstrated substantial increases in their population growth in the last ten years.

It is estimated that nearly two thirds of Hawaii's children and youth (70% ) live in urbanized areas, while the remaining one third (30%) live in rural areas. Persons under 19 years of age are more likely to live in the suburbs, while adults are more likely to live in the central urban areas. The State of Hawaii has no frontier areas.

The ethnic composition of the counties is also diverse creating challenges in service provision and infrastructure design that are both culturally sensitive and community-based. A representation of the ethnic composition of each county is displayed in Table 2-8. The specific health status of these populations will be discussed in the sections following this overview.

<b>Table 2-8 Ethnic Distribution of Population by County: 2003.</b>										
<b>Ethnic Group</b>	<b>Hawaii</b>		<b>Honolulu</b>		<b>Kauai</b>		<b>Maui</b>		<b>State of Hawaii</b>	
	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
Caucasian	44,528	28.8	179,294	20.5	19,223	32.1	46,106	34.4	289,151	23.7
Hawaiian	44,652	28.9	169,964	19.5	13,532	22.6	30,341	22.6	258,489	21.1
Chinese	2,648	1.7	65,352	7.5	873	1.5	1,455	1.1	70,328	5.8
Filipino	19,143	12.4	147,627	16.9	13,109	21.9	25,263	18.8	205,142	16.8
Japanese	27,813	18.0	193,430	22.1	8,938	14.9	17,645	13.2	247,826	20.3
Others	15,743	10.2	118,039	13.5	4,274	7.1	13,288	9.9	151,344	12.4
Total	154,526		873,707		59,950		134,099		1,222,282	
Source: Hawaii State. Department of Health, Office of Health Status Monitoring, Hawaii Health Survey 2003.										

Native Hawaiians are considered to be one of the most vulnerable populations with respect to health and economic indicators. In 2003, Native Hawaiians comprised 21% of the State's total population. Hawaii County

has the largest proportion of Native Hawaiians in state where they are the largest ethnic group representing 28.9% of the county population.

## **Families and Households**

Hawaii families are unique from families in the U.S. First, Hawaii families are slightly larger than the national average, have a greater percentage of multigenerational households, and have a larger proportion of interethnic marriages.<sup>17</sup> A review of U.S. Census data reveals changes in the composition of the state's households and families.

The total number of households increased in Hawaii by 13% from 1990 (356,267) to 2000 (403,240). Like the rest of the U.S., average household size in Hawaii continues to decrease from 3.0% in 1990 to 2.9% in 2000. This is a reflection of delays in marriage, increasing single-parent households, high rates of divorce, decline in the proportion of households with children, and with large numbers of children, as well as the increase in the proportion of women remaining childless.

### Family Structure

Household size for the state (2.9%) was higher than the national average (2.6%) and may be due to Hawaii's higher rate of multigenerational households (homes with 3 or more generations). Hawaii leads the nation with the highest percentage of multigenerational households (8.2% for the state compared to 3.7% for nationwide). The rates are similar for the percentage of households that include both grandparents living with their grandchildren. About 8% of Hawaii households include grandparents and their grandchildren compared with the national average of 3.9%.

Although, there is a high rate of multigenerational households in the state, fewer Hawaii families have grandparents living with their grandchildren who were the *primary caregivers* for their grandchildren (28.5%), the lowest percentage in the nation. Grandparents who were raising their grandchildren in Hawaii were also more likely to be over 60 years old and less likely to be living in poverty than other states.

Several factors help explain the high percentage: the state's high cost of living (particularly housing costs) and aging population, a large immigrant population, single mothers/fathers returning to live with their parents, and strong cultural values prevalent in Asian and Pacific Islander groups that place an emphasis on supporting family (particularly elders).

The higher proportion of multi-generational households may also explain why Hawaii leads the nation with the highest percentage of "crowded" homes – that have more than one person per room. Almost 16% of Hawaii homes are considered crowded compared to 6% of homes nationally (California is the only state that nears the Hawaii figures with 15.2% crowded homes). About 8% of Hawaii homes are consider "severely crowded," with more than 1.5% people per room. Living in multigenerational and "crowded" households may also increase tension and decrease levels of privacy. Those in the middle or "sandwich generation," may be particularly stressed, especially when resources are limited and when both the young and the elderly need care.

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<sup>17</sup>Stern, Ivette R, et al, *Hawaii's Strong Families*. Honolulu: Center on the Family, University of Hawaii, 2004.



Census estimates from 2000, also reveal average family size (vs. household size) also decreased slightly by 2%, from 3.48% to 3.42%. The difference between family and household size could be explained by the higher state percentage of non-relatives that live in households (6.4%) compared with the national average (5.2%).

As noted earlier, 21.4% of Hawaii residents were of more than one race/ethnicity compared with only 2.4% nationwide. In 2000 47% of marriages were interethnic/racial.<sup>18</sup>

Like the nation, Hawaii is following the growing trend toward single parenthood. In 1990, about 15% of Hawaii's households with children were headed and supported by single moms. By 2000, single moms were heading 19.6% of families with children under 18, an increase of 30% in 10 years. Nationally, about 20% of families are headed by single moms, according to census estimates. Two percent of single households in Hawaii were headed by single dads in 2000, roughly equivalent to the national percentage. The census also reported that 37% of all single parents are divorced and 14% are separated while 41% have never been married. The high rate of unmarried parents is reflected in the steadily increasing proportion of births to unmarried women. In 2000, a third of all births were to unmarried women compared to 28% in 1990.<sup>19</sup>

The trend toward single parent families (the majority of which are headed by women) is a concern. Despite advances made by women in the workforce, women typically earn less than men, limiting the financial resources available to the family.

### Poverty

The percentage of families living below poverty rose 7.6% since 1990. While Hawaii county had the smallest *increase* in poor families (11% in 2000 compared to 10.9% in 1990), it still has the highest proportion of poor families in the state. Kauai showed the largest increase at 8.4%, up from 5%. In Honolulu, the number rose to 7% from 5.4%, while Maui saw an increase to 7.7% from 5.7%.

<b>Table 2-9. Poverty Status of Households Below Poverty , 2000</b>									
<b>Hawaii</b>		<b>Honolulu</b>		<b>Kauai</b>		<b>Maui</b>		<b>State Total</b>	
<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
4,084	11%	14,477	7.0%	1,224	8.4%	2,316	7.7%	22,101	7.6%
U.S. Census Bureau, Table QT-P35. Poverty Status in 1999 of Families and Nonfamily Householders: 2000.									

The poverty threshold differs by household size. In 2000, a family of four was impoverished if the household made under \$17,603. It is critical to remember that Hawaii's cost of living is quite high, and federal thresholds therefore underestimate the true extent of poverty in the state. The 40-year-old standard is largely based on food costs, adjusted for inflation but does not recognize geographical differences or the costs of health care, housing, child care, transportation, and other basic costs.

<sup>18</sup> *Ibid*, p. 3.

<sup>19</sup> Centers for Disease Control & Prevention, National Center for Health Statistics, *Births: Final Data for 2000*. National Vital Statistics Reports, Vol. 50, No. 5.

The percentage of single parent families in the state with related children that are below the poverty level was 28% in 2003 compared to married couples (5%). As with other poverty measures, the rates for Hawaii were lower than the U.S. for these indicators.

### Homeless

Homelessness severely affects individual and family well-being. Without a permanent address it is difficult for adults to find employment, access medical and dental care, and provide a safe and secure place to nurture their children.

The number of homeless in Hawaii has nearly doubled from 1999 to 2003 (from 3,171. homeless to 6,029).<sup>20</sup> Kauai had the biggest percentage increase of homeless from 153 to 336, a 120% increase. Maui increased by 107% from 556 to 1,153; Hawaii island was up 89% from 659 to 1,243; and Oahu was up 83% from 1,803 to 3,297.

The number of *hidden homeless* - people or families who share homes with family members or friends or are dependent on public assistance for their rent - is 228,444 people of 1.2 million residents in the state. This rate also doubled since 1999 driven up by the lack of affordable housing. While the number of *at-risk of becoming homeless* - people who would become homeless in 3 months if they lost their primary source of income - declined at 155,058.

Nearly 28% of the homeless people hold jobs and 40% of them work full-time, but do not make enough to pay rent and support their families. Hawaiians make up the single largest ethnic group of homeless (37%), followed by Caucasians (32.6%). Approximately 57% were males and 43% were females. Those 25-34 years old are the largest single age group at 23.8%.

Slightly more than half of all homeless individuals (52%) are members of a homeless family. Of the 1,893 homeless families, about 83% are families with children. Children account for 27% of the total homeless population in Hawaii, and 75% of these children are 12 years of age or younger.

Fully 40.6% of Hawaii's homeless have lived here all their lives. Another 33.1% have lived here more than 6 years. Only 8.4% of the homeless in the state have lived here less than 1 year. The duration of homelessness is less than 6 months for 43.8% of the people.

### **Quality of Life for Families**

Maintaining a good quality of life remains a priority for residents of the state. The Center on the Family at the University of Hawaii conducts research of the health of Hawaii's families. The Center publishes, *Hawaii Family Touchstones*, a long-term study of families in Hawaii, with selected, relevant, and measurable indicators. The data on quality of life for families in Hawaii are shared in this report.

Over three-quarters of the more than 1,000 families surveyed by The Center are spending quality time together, regularly eating meals together, and practicing good communication skills - behaviors indicated by research to be associated with strong families.<sup>21</sup> Issues related to the quality of family life, such as not having

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<sup>20</sup> SMS Research & Marketing, 2003 Homeless Point-Time Study.

<sup>21</sup> Stern, Ivette R, et al, *Hawaii's Strong Families*. Honolulu: Center on the Family, University of Hawaii, 2004. p. 8.

enough time with the family, keeping the family together, and family communication were identified as the greatest challenges facing families today by 28% of those surveyed statewide. Economic issues such as family finances, the high cost of living, and making ends meet, were a close second on the list of issues identified (27%) presenting the greatest challenges facing families.<sup>22</sup> These issues capture the challenges for working parents in Hawaii: balancing work to make ends meet with a healthy family.

Family functioning data from the 2003 National Child Health survey will be reviewed as part of on-going assessment. Preliminary results are presented in this report Appendix.

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<sup>22</sup> Stern, Ivette R, et al, *Portrait of Hawaii's Families*. Honolulu: Center on the Family, University of Hawaii, 2004. p. 7.

## WOMEN AND INFANTS' HEALTH

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### Introduction

The health of Hawaii's mothers and infants is relatively good compared to the nation overall. But, a downturn in the economy during the 1990s and influx of new immigrant groups from Asia and the Pacific may be affecting the health and well-being of the state's women and newborns. Across a spectrum of major health indicators, statewide trends have remained generally stable with no major progress toward greater improvement in population health with a few exceptions such as the continuing decrease in teen births. However, Hawaii continues to rank in the top half of the states for most health measures including health insurance coverage, and low female mortality rates of for heart disease, and breast and lung cancer.

Despite this general positive overall picture, significant health challenges remain. Like most of the U.S, Hawaii has witnessed a disturbing upward trend of low birth weight babies and preterm births as well as births to unmarried mothers. There are striking health disparities based on ethnicity, income, and geographic location, especially for Native Hawaiians that are masked when aggregate data is presented. Furthermore, public health infrastructure has been eroded due to budget cuts through the 1990s. The cost of ignoring these troubling trends could result in increased health costs in the future.

### Women & Infant Priorities

The State of Hawaii has recognized the need for improved health services for women to assure healthy outcomes for mothers and infants. As part of the commitment to the health of this population in the state, a Women and Infants (WI) Work Group was convened as a component of the Title V Needs Assessment. Based on a review of the existing MCH priorities, stakeholder input, and review of research and data; the work group submitted a list of five key health issues for consideration as part of the final state priority needs for the MCH population. Using a set of prioritization criteria, 3 final priorities were identified for the WI population group:

- Reduce the rate of unintended pregnancy (including a focus on teen pregnancy)
- Increase abstinence from alcohol use during pregnancy
- Increase abstinence from smoking during pregnancy

## WOMEN'S HEALTH

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### Introduction

Increasingly, the Maternal Child Health profession is embracing the responsibility for issues surrounding women's health. Traditionally, women in MCH were viewed in relationship to *childbearing* with little attention to women's health during the longer and often more demanding period of *child-rearing*.

Moreover, recent research indicates that maternal health is one of the most significant factors in assuring healthy birth outcomes. Maternal health is clearly influenced by a complex web of socioeconomic and environmental influences that precede a woman's pregnancy, even by generations. Chronic illness and the general health status of women are important elements in the creation of pregnancy-related risks. The

exclusion of these important maternal health factors reduces the effectiveness of existing perinatal services and interventions to improve the lives of infants and children.

Attention on women's health is also important because the reproductive health needs of women require higher utilization of health services during a large portion of their lives (child-bearing years from 15-44). Furthermore, women live longer than men, thus require health services well into their senior years. Women also continue to be primary care givers for children and, often now for aging parents. Yet, women continue to lag behind men in securing the political and economic status necessary to shoulder this important social responsibility. Assuring that women receive continuity of care and adequate access to care before, after and independent of childbearing is a logical extension for the MCH field to assure family well-being.

With this mind, the Family Health Services Division includes in this report a brief section on women's health. On-going assessment efforts in the future will improve data collection and analysis in this area.

Overall, women in Hawaii enjoy better health than the nation as a whole. In a recent report on the *Status of Women in the States* published by the Institute for Women's Policy Research, Hawaii ranked in the top five states for measures on women's health/well-being and reproductive rights and in the top half of states for social/economic autonomy and employment/earnings. In the National Women's Law Center 2004 report, *Making the Grade on Women's Health*, Hawaii was ranked 6<sup>th</sup> among the states. However, the state did receive an unsatisfactory grade, the same grade as the nation received as a whole.<sup>23</sup>

## **Data Sources**

The data presented in this report is not a comprehensive review of all data of Hawaii women. Instead, a general overview of women's status and health is presented.

Routine reporting on women's health issues is relatively new for the Family Health Services Division. Since the last needs assessment report, FHSD's Maternal and Child Health Branch received a federal MCH Bureau grant on women's health that led to the release of two publications on women's health in Hawaii. The documents were developed in conjunction with key stakeholders through a women's health council spearheaded by FHSD's MCH Branch. *Women's Health in Hawaii* is a data booklet released in 2002 by the Department of Health Office of Health Equity and *Hawaii Women's Health Status* was released in 2004, the product of a statewide women's health conference. The latter is an extensive compendium of local health data and policy recommendations to help advance women's health in the state. General population and health disparity data is derived from the latter report.

Some general comparative health data between Hawaii and the U.S. for women's health is presented in this report from two national studies mentioned above.

## **Demographics**

In 2002, the Hawaii population exceeded 1.2 million with females representing 49.9 % of the total population, or approximately 600,000 women and girls. Women under the age of 34 represent the largest proportion of the female population at 45.3%, followed by ages 35-64 at 39.7%. Men outnumber women under

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<sup>23</sup> the National Women's Law Center & Oregon Health & Science University, *Making the Grade on Women's Health*. Washington, D.C., 2004

the age of 35 in Hawaii, reflecting the fact that more boys than girls are born every year. During the ages of 35-64 the ratio of women to men shifts closer to equal. Among older adults age 65 and older, women comprise 56% of the population, increasingly outnumbering men due to their greater longevity.

The ethnic/racial composition of the female population reflects the diversity of the state with 4 major ethnic groups comprises 80% of the population: Native Hawaiians, Caucasians, Japanese and Filipinos. No single group comprising a majority. In 2002, Japanese women represented 30% of the female population ages 65 and older, nearly twice the proportion of Filipino, Hawaiian and Caucasian racial groups. The number of females age 25 and younger is much higher among Native Hawaiians, with 50% of the female population falling within this age cohort.<sup>24</sup>

### **Economic Security & Poverty**

Socio-economic indicators are often used as determinants for health status. Poverty directly affects a person's access to care particularly for women who require more primary health care services than men due to reproductive health needs. Thus, women generally spend more of their income on health care than men, but often lack the economic resources to access care.

Women in Hawaii, like women in the U.S. overall, do not enjoy economic parity with men. According to 2003 census estimates, Hawaii women earned about 84 cents for every dollar earned by men, is a relatively higher ratio than for the nation overall (76 cents for every dollar men earn). Hawaii women working full-time also have slightly higher median annual earnings than women in the U.S. as a whole (\$30,700 and \$30,100 respectively).<sup>25</sup> But, the comparison does not take into consideration, Hawaii's substantially higher cost of living. The rate of women in the labor force in Hawaii is slightly higher than in the U.S. overall (60.8% compared to 59.6%).

The proportion of women in poverty in Hawaii was slightly higher than that of women in the United States- 12.2% for Hawaii compared to 12.1% for the U.S. However, the federal poverty levels are standards set for the entire U.S. and do not account for the higher cost of living differences for Hawaii residents. Thus, these figures may under-report the prevalence of the problem. Among selected household types, women heading households with no spouse have the highest rates of poverty (24.9%), followed by females living alone (17.6%).

An important marker of socioeconomic status is higher education attainment. Research suggests that college-educated women have better health and survival rates than those with less education. In 2002, 35% of all women in Hawaii had a college degree, representing half of all the college degrees awarded in the state. This reflects considerable gains compared to earlier years, when males were more likely than females to attain college degrees.

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<sup>24</sup> Institute for Women's Policy Research, *The Status of Women in the States, 2004*. Washington, D.C., 2004.

<sup>25</sup> Institute for Women's Policy Research, Appendix IV.

## Health Status

Because women live longer than men on average (in Hawaii 75.90 for men compared to 82.06 for women),<sup>26</sup> women suffer from more nonfatal acute and chronic conditions and are more likely to live with disabilities and suffer from depression.<sup>27</sup> The health of women in their reproductive years is crucial to sustaining good health in later years of life.

Table 3-1 presents a general portrait of Hawaii's women's health compared to that of the nation as a whole. Considering the 9 indicators on women's health as a whole, the IWPR reported Hawaii ranked fifth among all the states (a drop from its first place ranking in 1999). Hawaii women fare particularly well on mortality rates for heart disease, lung cancer, and breast cancer. The state also ranks high on the average number of days per month in which women are in good mental health. However, of some concern is the higher than average rates for the incidence of chlamydia, diabetes mortality, and suicide among women.

<b>Table 3-1. Data on Women's Morbidity and Mortality, Hawaii &amp; U.S., 2002</b>		
<b>Indicator</b>	<b>Hawaii</b>	<b>United States</b>
Average Annual Mortality Rate Among Women from Heart Disease (per 100,000)	146.1	211.5
Average Annual Mortality Rate Among Women with Lung Cancer (per 100,000)	25.4	41.0
Average Annual Mortality Rate Among From Breast Cancer (per 100,000)	20.0	26.5
Percent of Women Who Have Ever Been Told They Have Diabetes	5.6%	6.5%*
Average Annual Incidence Rate of Chlamydia Among Women (per 100,000) <sup>d</sup>	571.4	455.4
Average Annual Incidence Rate of AIDS Among Women (per 100,000 Adolescents and Adults)	3.0	9.1
Average Number of Days of Poor Mental Health Among Women	2.7	3.8
Average Annual Mortality Rate Among Women from Suicide (per 100,000)	4.7	4.0
Average Number of Days of Limited Activities Among Women	3.3	3.5
Source: Institute for Women's Policy Research, <i>The Status of Women in the States</i> , 2004. Washington, D.C., 2004, Appendix IV.		

## Preventive Care/Health Habits

Women who engage in healthy behaviors can expect to live longer lives. Data summarized in Table 3-2 examines Hawaii's women's use of preventive care and overall good health habits compared to the U.S. Hawaii's women use of preventive care varies compared to the national average. Generally, women in the state

<sup>26</sup> State of Hawaii Data Book 2002, Table 2.11.

<sup>27</sup> Institute for Women's Policy Research, *The Status of Women in Hawaii*. Washington, D.C., 2000.

have better health habits than their counterparts on the continent. But, again aggregate data can disguise serious discrepancies between subgroups.

<b>Table 3-2. Preventive Care and Health Behaviors, Hawaii &amp; U.S., 2002</b>		
<b>Preventive Care</b>	<b>Hawaii</b>	<b>United States</b>
Percent of Women Age 40 and Older Who had a Mammogram in the Past 2 Years	70.2	76.1
Percent of Women Aged 18 and Older Had a Pap Smear in the Past 3 Years	85.6	86.6
Percent of Women Aged 18 and Older Who Have Been Screened for Cholesterol in the Past 5 Years	77.2	74.7
<b>Health Behaviors</b>		
Percent of Women Who Smoke (100 or more cigarettes in their lifetime and who now smoke everyday or some days)	16.0	20.8
Percent of Women Who Report Chronic Drinking (5+ alcohol beverages during at one occasion in the past month)	4.5	8.2
Percent of Women Who Report No Leisure-Time Physical Activity During the Past Month	18.3	26.9
Percent of Women Eat 5+ Servings of Fruits or Vegetables per Day	24.4	27.8
Percent of Women who obese	14.1	21.3
Source: Centers for Disease Control and Prevention (CDC), <i>Behavioral Risk Factor Surveillance System Survey Data</i> available at <a href="http://apps.nccd.cdc.gov/brfss/Trends/TrendData.asp">http://apps.nccd.cdc.gov/brfss/Trends/TrendData.asp</a> , accessed January 20, 2004		

## Health Disparities

As noted, aggregate reporting of health data for the state can hide striking disparities by subgroups. One of the more serious examples is the data for Hawaii women's cancer rates by race/ethnicity. As shown in Table 3-3, Native Hawaiian mortality rates for breast and lung/bronchus cancer are nearly three times higher than for Japanese women, one of the highest rates in the U.S.



<b>Table 3-3. Average Annual Female Cancer Mortality Rates per 100,000 by Race/Ethnicity, Hawaii</b>				
	<b>Native Hawaiian</b>	<b>Japanese</b>	<b>Caucasian</b>	<b>Filipino</b>
Breast Cancer	<b>31.0</b>	<b>12.2</b>	<b>25.4</b>	<b>14.2</b>
Lung & Bronchus	48.2	14.4	33.7	20.4
Source: Kapiolani Women's Center, <i>Hawaii Women's Health Status</i> . Honolulu, 2004.				

The 2004 *Hawaii Women's Health Status Report* identified some of the key subgroups that report significant disparities.

### **Native Hawaiian Women**

Hawaiian/Part-Hawaiian women have poorer health status than any other racial/ethnic group. They are more susceptible to major chronic and degenerative diseases and more likely to engage in unhealthy behavioral risk factors than other groups in the adult population.

- Hawaiian/Part-Hawaiian women are at higher risk for heart disease and stroke.
- Hawaiian/Part-Hawaiian women are at higher risk for Type 2 diabetes.
- Hawaiian/Part-Hawaiian women are at higher risk for cancer.
- Hawaiian/Part-Hawaiian women are more likely to be overweight/obese.
- Hawaiian/Part-Hawaiian women are more likely to smoke cigarettes.

### **Neighbor Island Women**

Women residents of the outer islands and rural areas are at higher risk for poor health status and quality of life. There seems to be a growing gap between the overall health of women living in urban Oahu and women living on the outer islands due to poor access to healthcare providers, higher poverty and birth rates and less educational attainment.

- Neighbor island women report worse health than women on Oahu.
- Neighbor island women are more likely to smoke cigarettes.
- Neighbor island women are more likely to be heavy drinkers.
- Neighbor island women have less educational attainment.
- Neighbor island women are more likely to be unmarried mothers.

### **Young Women**

Although young women in Hawaii are generally healthy with less incidence of chronic disease than other age groups, they face healthcare challenges that require special attention in maternal health and health behaviors.

- Young women in Hawaii are more likely to smoke during pregnancy.
- Young women are more likely to be hospitalized during pregnancy.
- Young women are more likely to be anemic.
- Young women are more likely to be hospitalized for amphetamine use.

## Elderly Women

Elderly women in Hawaii face unique healthcare challenges due to their longevity, representing a disproportionate share of the elderly population. This percentage is expected to dramatically increase as Baby Boomers age over the next 20 years. As a result, policy initiatives need to take into consideration the additional years of retirement, ill-health and medical expenses that elderly women incur.

- Elderly women in Hawaii are more likely than men to live below federal poverty levels.
- Elderly women in Hawaii report worse health than other age groups.
- Elderly women in Hawaii are more likely to be heavy drinkers.
- Elderly women in Hawaii are at higher risk for Type 2 diabetes.

## MATERNAL & INFANT HEALTH

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### Data Sources

Most of the data in this section comes from infant birth and death certificates. Vital statistics provides one of the few types of systematic measures reflecting child well-being that are available fairly consistently across the U.S. The data collected from infant birth and death certificates provide some insight into the conditions at birth that may often shape a young person's life. Birth defects data come from the Hawaii Birth Defects program.

## HEALTH STATUS

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### Birth Rates

The Hawaii birth rate for 2003 was 14.4 per 1000 resident population, comparable to the U.S. birth rate of 14.1 for the same year.<sup>28</sup> Hawaii's birth rate has declined dramatically over the past 30 years from 21.2 births per 1000 population in 1970, a 30% decrease.<sup>29</sup> Prior to 1997, Hawaii's birth rate was consistently higher than the national rate, but has essentially mirrored the national decline for the past several years.

The decrease in the birth rate is due in part to fewer women in the child-bearing age group (15-44 years), preference for fewer children and increasing delays in child bearing. Hawaii's birth rate may have actually declined more dramatically but has been bolstered by a relatively high birth rate among military families. In 2003 the military accounted for 16% of all births in the State.<sup>30</sup>

Birth rates in Hawaii differ significantly by ethnicity. In 2001, Native Hawaiians had the highest birth rates (19.0 per 1,000 live births), followed by Filipinos (16.7).<sup>31</sup> Japanese had the lowest birth rate among the major ethnic/racial groups with 9.0. Birth rates across all groups have decreased since 1980.

Chart 3-1 shows the Hawaii birth, fertility, and pregnancy rates for the years between 1990 and 2003.<sup>32</sup>

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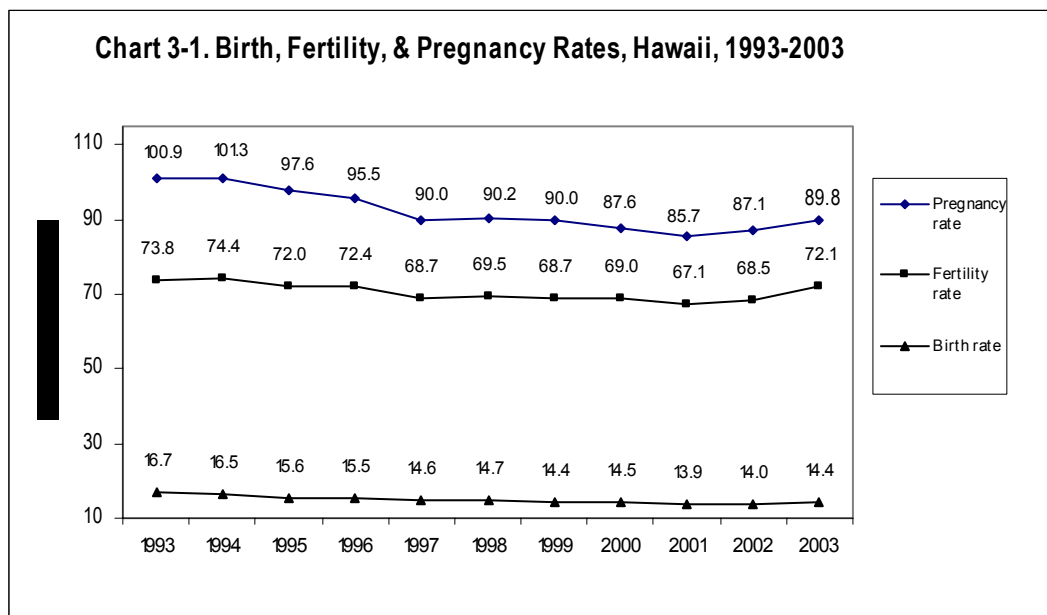
<sup>28</sup> Hawaii State Department of Health, Office of Health Status Monitoring, *Annual Report: Statistics Supplement 2003* (Honolulu). Available on Department of Health website: <http://www.hawaii.gov/doh/stats>. National data from the Centers for Disease Control, National Center for Health Statistics, *National Vital Statistics Report*, Vol. 53. No. 9, Nov 23, 2004. p. 1. Available on CDC website: <http://www.cdc.gov/nchs>. Report provides preliminary data for 2003 with most of birth records for U.S.

<sup>29</sup> HMSA Foundation, *Health Trends in Hawaii*, 4th Edition. Honolulu: HMSA Foundation, 1999 p. 10.

<sup>30</sup> *Annual Report: Statistics Supplement 2003*.

<sup>31</sup> *Health Trends in Hawaii*, p. 19

The fertility rate is the key summary measure describing trends and variation in childbearing. It relates births to the number of women of childbearing age. This rate was in steady decline until 2003 when the rate suddenly increased. In 2002 the Hawaii rate was 68.5 births per 1000 women aged 15-44 years compared to 64.8 for the U.S. As expected, pregnancy rates have also been in decline since 1990.



### Births & Pregnancy Outcomes

The number of women of childbearing years (age 15-44 years) decreased 3.1% in the state over the past 13 years (see Table 2-7 in Chapter 2). The number of pregnancies decreased substantially by 12% for that same period. Based on vital statistics data from the Hawaii State Department of Health, the total number of pregnancies for 2003 was 22,509. Of that number, 18,058 (80%) were live births, 3,581 (16%) were reported abortions, and 862 (4%) were fetal deaths. The number of pregnancies and live births in 2003 increased slightly from the previous year by 1.5% and 3.6% respectively, starting to reverse a trend of steady decline. Nationally, the number of live births in 2003 also went up slightly from 2002.<sup>33</sup> The number of pregnancy outcomes from 1994 to 2003 is provided in Table 3-4.

<sup>32</sup> Fertility rate: (live births x 1000) / (total population of women 15-44); Pregnancy rate: (live births+fetal deaths+abortions)x1000 / (total population of women 15-44); Birth rate: (live births x 1000) / (total population).

<sup>33</sup> *National Vital Statistics Report*, p. 1. Pregnancies are not reported annually.

**Table 3-4. Pregnancies & Outcomes, Hawaii, 1994 - 2003**

Outcomes	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Pregnancies	26,457	25,139	24,234	22,680	22,779	22,305	22,179	21,764	22,179	22,509
Live Births	19,438	18,552	18,378	17,326	17,552	17,032	17,446	17,043	17,446	18,066
Non-marital Births	5,523	5,427	5,561	5,191	5,583	5,601	5,925	5,647	5,925	6,062
No. of teen births (19 yrs & under)	735	658	660	604	715	597	430	504	430	466
Fetal Deaths	1,265	1,086	985	854	1,084	903	836	759	836	862
Abortions	5,754	5,501	4,871	4,500	4,143	4,370	3,897	3,962	3,897	3,581

Source: Hawai'i State Department of Health, Office of Health Status Monitoring. Annual Report: Statistical Supplement 1994-2003.

Despite an increase in pregnancies, the number of abortions in 2003 decreased by 8.1%. Among the 4 major Hawaii ethnic groups, Caucasians have the highest induced abortion ratio (230.5 per 1,000 live births), followed by Filipinos (190.5), and Japanese (176.7).<sup>34</sup> Hawaiians were the least likely to abort with a rate of 143.6. Among the counties, Kauai had the highest abortion rate (227.3 per 1,000 live births), followed by Maui (206.6), Honolulu (203.6) and Hawaii (146.5).

### Unintended Pregnancy

An estimated half of all unintended pregnancies in the U.S. end in abortion.<sup>35</sup> Based on data from the Hawai'i Pregnancy Risk Assessment Monitoring System (PRAMS) combined with vital statistics data on abortions and fetal deaths, Hawaii's estimated rate of unintended pregnancy for 2003 is 49.6%. The rate has gone down slightly from 2000 (53.5%), the first year of PRAMS data.

Further analysis of PRAMS data for 2000-01 indicate 52.8% of the births lives births were wanted by mothers, 8.3% were unwanted, 26.4% were mistimed, and 12.5% were ambivalent.

The consequences of unintended pregnancy are serious. Research has shown that unintended pregnancy is a risk factor for inadequate prenatal care, low birth weight, exposure of the fetus to harmful substances like tobacco, alcohol and other drugs, neonatal death, domestic violence and child abuse. Unintended pregnancy is associated with economic hardship, marital dissolution, and spousal abuse. In an era when technology should enable couples to have considerable control over their fertility, the rate of unintended pregnancies can be reduced.

<sup>34</sup> Hawaii State Department of Health, Office of Health Status Monitoring, *Annual Report: Statistical Supplement 2003*: (Honolulu). Table 40.

<sup>35</sup> U.S. Department of Health and Human Services, *Healthy People 2010, Conference Edition*. Washington, DC, 2000, p.9-3

## Maternal Characteristics

Data for 2003 of all live births by age and ethnicity is presented in Table 3-5. The majority of births in 2003 were to women between the ages of 20 and 34 years of age.<sup>36</sup> The number of births to women over the age of 35 has steadily increased over the last decade from 11% in 1990 to 17.5% in 2003 following a national trend of women postponing pregnancy to later in life.

<b>Table 3-5. Total Live Births by Race and Age of Mother (residents), Hawaii 2003</b>								
<b>Race</b>	<b>Under 18 years</b>	<b>18-19 years</b>	<b>20-24 years</b>	<b>25-29 years</b>	<b>30-34 years</b>	<b>35-39 years</b>	<b>40+ years</b>	<b>Total by Race</b>
Caucasian	23	130	1,050	1,084	1,024	599	163	4,073
Hawaiian	242	518	1,625	1,185	819	398	88	4,875
Filipino	113	192	775	908	916	462	125	3,491
Japanese	19	51	213	424	758	593	144	2,202
Other	69	162	872	903	828	487	104	3,425
<b>Total</b>	<b>466</b>	<b>1,053</b>	<b>4,535</b>	<b>4,504</b>	<b>4,345</b>	<b>2,539</b>	<b>624</b>	<b>18,066</b>
Source: Hawai'i State Department of Health, Office of Health Status Monitoring. Annual Report: Statistical Supplement 2003.								

Approximately 8.4% of all live births were to adolescents between 14 and 19 years of age. This percentage has dropped over the past decade. The Hawaiian and Filipino populations had the highest numbers of teenaged pregnancies. The Hawaiian births amounted to 51.9% of all births under age 18 and 49.2% of all births at 18 and 19 years of age. Filipinos followed with 24.2% of all births under age 18, and 18.2% of all births between 18 and 19 years of age. Refer to Table 3-6 for additional selected maternal characteristics by ethnicity.

<b>Table 3-6. Selected Maternal and Prenatal Care Characteristics (residents), Hawaii, 2003</b>						
<b>Characteristics</b>	<b>% of total births</b>	<b>% of births to teenage mothers (&lt;19 yrs)</b>	<b>% of births to unmarried mothers</b>	<b>% of mothers starting prenatal care:</b>		<b>% of low birth weight infants</b>
				<b>First trimester</b>	<b>3<sup>rd</sup> trimester no care</b>	
Caucasian	22.5%	4.9%	10.9%	87.2%	11.6%	6.4%
Hawaiian	27.0%	51.9%	44.4%	74.7%	22.0%	8.8%
Chinese	3.4%	1.1%	1.2%	90.0%	7.7%	8.2%
Filipino	19.3%	24.2%	20.0%	81.6%	16.4%	10.7%
Japanese	12.2%	4.1%	6.4%	87.5%	10.1%	10.1%
Other*	15.6%	13.7%	17.0%	71.1%	24.3%	7.8%
* "Other" here refers to all remaining births.						
Source: Hawai'i State Department of Health, Office of Health Status Monitoring. Annual Report: Statistical Supplement 2003.						

<sup>36</sup> Annual Report: Statistical Supplement 2003.

While the birth rate in Hawaii has steadily declined over the past decade (refer to Chart 3-1), the non-marital birth rate has steadily increased, from 175.6 per 1000 live births in 1980 to a high of 336.1 in 2003.<sup>37</sup> This follows the national trend of increased births to single mothers. The percentage of births to unmarried mothers was significantly higher in the Hawaiian population when compared with the other ethnic groups.

The skyrocketing rate of non-marital births and female-headed families is a concern. Families that are formed by first births to single parents, to young mothers, or to mothers with limited education are particularly at risk of facing long-term difficulties, with the risk for poor outcomes increasing when families are formed under all three circumstances. Children in these families tend to grow up in poverty, have below average academic achievement, have lower college aspirations, engage in early sexual activity, and, as adults, have greater risk for divorce.<sup>38</sup>

The educational attainment of women who give birth is important because higher educational attainment is associated with more timely receipt of prenatal care and fewer detrimental lifestyle and health behaviors during pregnancy that can affect the birth outcome.<sup>39</sup> Higher educational attainment can also result in increased economic opportunity for all mothers and their families.

Hawaii compares very well to the national average for maternal education. Nearly 90% of women who gave birth in 2002 completed a high school education (89.8%) compared to 78.5% nationally. Nearly half of the Hawaii women (50.0%) had completed 4 years of college or more compared to 25.9% nationally. An estimated 9.2% of Hawaii women who gave birth in 2002 did not complete high school.

## **Prenatal Care**

Women receiving early and consistent prenatal care tend to have better birth outcomes. In 2003, the national estimate for women starting prenatal care in the first trimester was 84.1%.<sup>40</sup> In Hawaii, Caucasian (87.5%), Japanese (89.1%), Chinese (91.2%) exceeded that rate for the year 2003. The lowest percentages of women starting prenatal care in the first trimester were Hawaiians (75.6%), and Filipino women (84.0%).<sup>41</sup> Although disparities in prenatal care continue, Hawaii has witnessed a significant improvement in entry to prenatal care since 1990, from 68.9% to 80.4% in 2003.

Another measure of prenatal care is the Kotelchuk Index that determines whether pregnant women received the recommended number of prenatal care visits based on time of entry into care and length of gestation. Hawaii's Kotelchuk score is slightly below the national average. In 2003, 69.3% of women age 15-44 years in Hawaii with a live birth had an adequate score or better on the index compared to the national

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<sup>37</sup> Data from *Annual Report: Statistics Supplement 2003*. The figure for 1980 is from the Hawaii State Department of Business & Economic Development, *The State of Hawaii Data Book 1998*, Table 2.01, p. 66.

<sup>38</sup> Center on the Family, *Portrait of Hawaii Families*, P. 4.

<sup>39</sup> *National Vital Statistics Report*, Vol. 52. No. 10, p. 11. State data is from the *Annual Report: Statistics Supplement 2002*. 2002 is the latest national data on mother's educational attainment.

<sup>40</sup> *National Vital Statistics Report*, Vol. 53. No. 9, p.6. Note: National data for Hawaii births may differ slightly from that reported by the state. State reports of vital statistics data can be considered more accurate since records have been thoroughly checked and missing data entered.

<sup>41</sup> *Annual Report: Statistics Supplement 2003*.

baseline of 74%.<sup>42</sup> The trend in Hawaii for the Kotelchuk index was edging upward through 2002. The 2003 data is significantly lower than previous years and will be monitored closely.

### **Medical & Other Risk Factors**

The presence of maternal medical risk factors has a major influence on pregnancy complications and infant survival. Many of these conditions require close medical supervision to prevent severe complications. Nationally, in 2002 the most frequently reported medical risk factors were pregnancy-associated hypertension (37.8/1,000 live births), diabetes (32.8) and anemia (25.7).<sup>43</sup> Hawaii vital statistics data showed 39.3 mothers per 1,000 live births had pregnancy-associated hypertension, roughly comparable to the U.S. average. However, 65.5 mothers had diabetes per 1,000 live births and 54.5 for anemia nearly double the national average.<sup>44</sup>

### **Preterm Birth**

The percentage of preterm births (less than 37 weeks of gestation) has slowly edged upward since 1992. In 1992 the rate was 8.3% of all live births and jumped to 11.0% in 2003.<sup>45</sup> Nationally, the proportion of infants born preterm has also risen quite steadily during the 1990's to 12.3% in 2003.<sup>46</sup>

Honolulu County had the highest rate of preterm births in 2003 (11.4%), up from 0.7% in 1994. Hawaii County had the next highest rate (10.4%), 2.5 times higher than in 1994 (4.3%).

Among the maternal age groups, teens less than 15-17 years had the highest percentage of preterm births (14.6%), although the numbers are small. The proportion of preterm births declines as maternal age increases to age 34 years. The lowest percentage is among mothers 20-29 years (10.1%). After 34 years, the preterm rate begins to increase with maternal age to 13.7% for mothers older than 40 years.

Preterm newborns are more likely to be neurologically impaired than infants born at longer gestations, often requiring costly care. Preterm birth results from spontaneous preterm labor, premature rupture of the membranes (PROM), or medical induction (these conditions are not mutually exclusive). Although preterm births are associated with an increase in multiple births, preterm deliveries are also increasing for singleton births. Substantial reductions in preterm birth are unlikely until the mechanisms leading to preterm birth are better understood.

### **Low birth weight**

Low birth weight (LBW) is the factor most closely associated with neonatal mortality. LBW infants are more likely to experience long-term disability or to die during the first year of life than are infants of normal weight.

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<sup>42</sup> Hawaii State Department of Health, Family Health Services Division, *Title V Maternal and Child Health Service Block Grant Program Annual Report and Application, 2006*, Core Health Status Indicator #3. National baseline data is from 1995.

<sup>43</sup> *National Vital Statistics Report*, Vol. 52. No. 10, p. 11

<sup>44</sup> *Annual Report: Statistics Supplement 2003*. It is unclear how accurately information on maternal medical conditions is captured on birth certificates.

<sup>45</sup> *Annual Report: Statistics Supplement 1992-2003*.

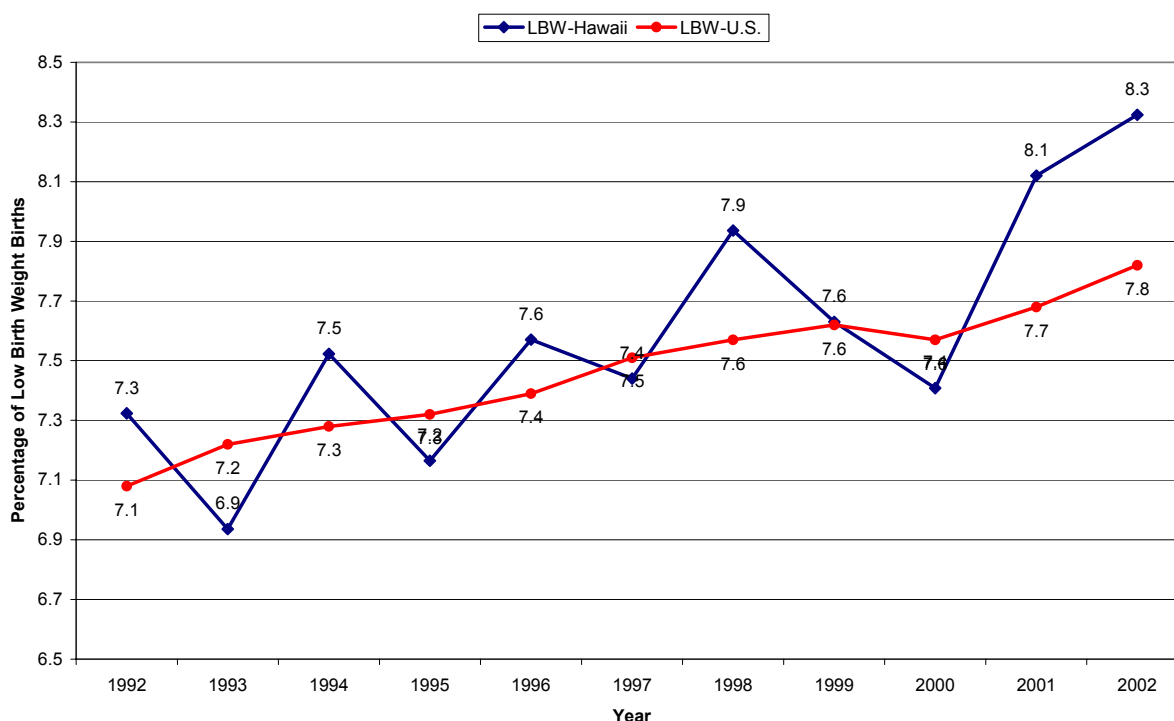
<sup>46</sup> *National Vital Statistics Report*, Vol. 53. No. 9, p. 6.

Factors associated with increased risk of low birth weight include poverty, maternal smoking, and low levels of educational attainment.<sup>47</sup>

The rates of LBW have slowly increased over the decade along with those of preterm birth, although not as quickly (see Chart 3-2).<sup>48</sup> In 2003 the total number of LBW infants was 1,566 or 8.6% of the total live births. The Hawaii percentage was higher than the U.S. rate of 7.9%. Nationally, LBW is also increasing, attributed partially to the popularity of fertility drugs and resulting increase in multiple births mostly among Caucasian women.<sup>49</sup> Multiple births, however, do not account for the increase in LBW babies in Hawaii.

Like preterm births, the youngest and oldest maternal age groups are at the highest risk of having LBW infants. Of the major ethnic groups, Japanese and Filipino women consistently had the highest rate of LBW infants in the state. The 2003 rate for Japanese was 10.1% and Filipinos was 10.7%.<sup>50</sup>

Chart 3-2 Percentage of Low Birth Weight Births (residents), Hawaii and U.S. 1992-2002



## Birth Defects

A birth defect is defined as any structural, functional or biochemical abnormality in development of the fetus that originates before birth and is detectable soon after birth. While about 20% of birth defects can be traced to known factors (genetic, environmental hazards or adverse life style), the causes of the remaining

<sup>47</sup> Maternal and Child Health Bureau, *Child Health USA 2001*. Washington, D.C. Department of Health and Human Services, 2001. p. 20

<sup>48</sup> Low Birth Weight (LBW) = Infants weighing less than 2500 grams or 5.5 lbs. Rate is LBW infants per 1,000 live births.

<sup>49</sup> *Child Health USA 2000*. p. 20

<sup>50</sup> *Annual Report: Statistics Supplement 2003*.

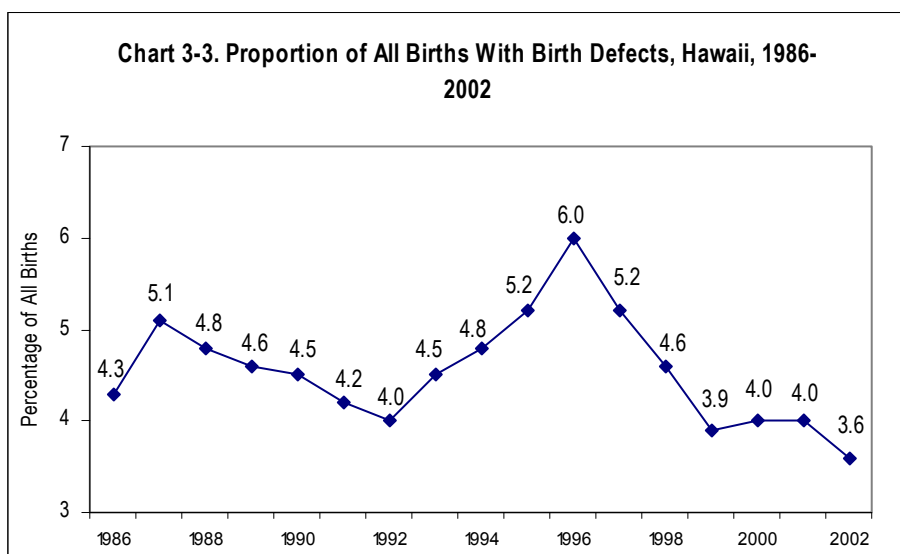


80% of birth defects and related conditions remain unknown. Thus, collection of data and research on birth defects continues to be an important core public health function for Family Health Services Division.

Birth defects are a primary cause of infant mortality, with about 400 fetal deaths occurring each year in Hawaii. About 1 in five (20%) of all pregnancies result in spontaneous miscarriage and an average of 1,000 (5.2%) of all babies born each year in Hawaii are born with some recognizable abnormality, according to the Hawaii Birth Defects Program.<sup>51</sup>

The number of babies born in Hawaii with some type of birth defect in 2002 was 647 (out of 18,182 live births). The proportion of birth defects (expressed as a percent of all births) has been relatively stable over the past years (see Chart 3-3).

Most children have a single defect when born (50.4%), but 9.7% have 5 or more defects. The types of birth defects most commonly encountered are grouped by the body system they affect. Cardiac and circulatory defects (heart and blood vessel problems) are the most common defects, followed by limb and musculoskeletal defects. Among the 4 counties, Oahu has the highest rate of birth defects (541.8 per 10,000 births) while Maui has the lowest rate (445.3). Women over 39 years of age have the highest rate of birth defects (819.7/10,000) followed by women age 35-39 years (636).



### Maternal Substance Use

The use of alcohol, tobacco, and illegal substances during pregnancy is a major risk factor for adverse outcomes including LBW infants, preterm delivery, stillbirth (late fetal deaths) and spontaneous abortion. Data for maternal substance use comes from the Hawai'i Pregnancy Risk Assessment Monitoring System (PRAMS), a population based survey of mothers at 2-4 months after child birth. Although the surveys are anonymous, behaviors are likely to be under-reported.

<sup>51</sup> Birth defects data from Hawaii Birth Defects Program, 1986-1997, *Statewide Data Surveillance, Report Number 11 on Birth Defects in Hawaii*, December 2003.

For 2003 the percentage of mothers with live births who used substances was 14.1%: 9.4% smoked cigarettes during pregnancy, 4.3% used alcohol, and 2.9% used some illegal drug. Rates for substance use have remained relatively stable since 2000.

## **Domestic Violence**

The Hawaii State Commission on the Status of Women study in 1993 estimated that nearly 50,000 women in Hawaii, between the ages of 18 and 64, have been victims of domestic violence.<sup>52</sup> Due to under-reporting nationwide, it is estimated that 7-20% of all pregnant women experience abuse during their current pregnancy. Abuse during pregnancy affects both the women and the fetus, which can increase rates of prematurity, low birth weight, abruptio placenta, fetal injury, and death.

Data on intimate partner violence is available from the 2003 Behavioral Risk Factor Surveillance System, however, survey respondents often resent such questions resulting in substantial under-reporting. Given this caveat, the data indicate that 3.2% of women 18-64 years have been physically injured by an intimate partner. Analysis of the data revealed adult victims tend to be Hawaiian, unmarried, with some college education, and unemployed. Rates for Kauai are highest at 4.1% followed by Maui at 2.5%.<sup>53</sup>

## **Outcome Measure: Infant Mortality**

There are five perinatal mortality measures used to assess overall outcomes for the MCH population in the federal MCH Block Grant. Data are presented here along with a discussion of whether the state was able to meet specific targets set for these measures.

With on-going needs assessment the FHSD will use this data to analyze the relationship between state program efforts, key national and state performance measures, and the outcome measures. Given limited epidemiological support and staff resources, this analysis will be delayed for future report updates.

The infant mortality rate (IMR) for 2003 was 7.3. Preliminary data for 2004 indicate the IMR was 5.4 per 1,000 live births. While the objective for 2003 (6.0) was not met, the 2004 objective of 5.8 was met. Although this rate is nearly 29% lower than it was in 2000 (7.6), because it is based on a relatively small number of deaths, the difference is not statistically significant. The rate is remarkably lower than it has been for the past 3 years.

Although the state has exceeded the objective for 2004, the objectives have not been changed because there is great variability in this rate due to small numbers in the numerator value.

The disparity between racial groups for this health measure is examined nationally by reporting the ratio of black IMR to white IMR. Because of Hawaii's varied ethnic representation, preliminary data collected indicate that for 2001 the ratio of the Black infant mortality rate to the White infant mortality rate was 0.5, whereas for 2003 the ratio was 4.1. The Black population is extremely small in Hawaii, and an increase or decrease by one or two infant deaths can dramatically affect this ratio. This is reflected in the wide range of infant mortality

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<sup>52</sup> Hawaii State Commission on the Status of Women, *Domestic Violence Report*. Honolulu, HSCSW, 1993.

<sup>53</sup> Hawaii State Department of Health, Behavioral Risk Factor Surveillance System 2003. Available on the web at <http://www.state.hi.us/health/statistics/brfss/index.html>.

rates reported (3.6-11.3) for Black infants over the past 5 years. Furthermore, fewer than 25 White and 10 Black infants died in any one of the past 5 years. In Hawaii the Black/White infant mortality ratio is an unstable measure and is not useful in making decisions about maternal and child health.

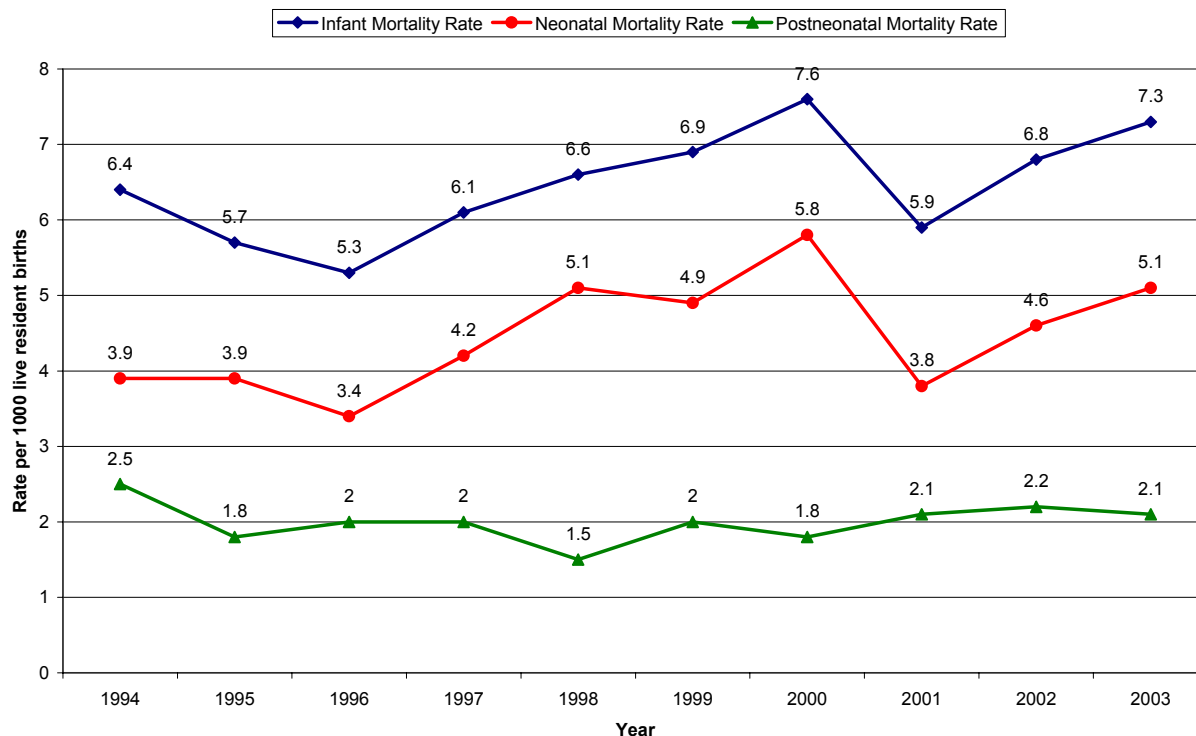
The neonatal mortality rate for 2003 was 5.1 per 1,000 live births. The preliminary data for 2004 is 4.1. Both objectives 2003 (4.2) and 2004 (4.0) were not met. However, the 2004 rate is 29% lower than the rate of 5.8 for 2000. Much of the reduction in Hawaii's infant mortality rate for the past 5 years has been due to a decrease in neonatal deaths. These are the deaths that are first impacted by improvements in rates of prenatal and neonatal care.

The postneonatal mortality rate for 2003 was 2.1 per 1,000 live births. The preliminary data for 2004 is 1.3. The objective for both years was set at 1.8 and was met in 2004. Hawaii's postneonatal death rate has remained relatively stable over the previous 4 years at ~2.0. To maintain a stable rate of 1.5, the national health objective for postneonatal mortality, FHSD will need to identify factors where improvements in infant care can be achieved. Although the 2004 rate is below the national health objective it is based on a fairly small number of deaths (24).

Perinatal mortality are fetal deaths  $\geq 28$  weeks plus infant deaths  $< 7$  days. The perinatal mortality rate for 2003 was 5.7 per 1,000 live births. The preliminary data for 2004 is 5.1. The objective 2003 (5.5) was not met, while the objective for 2004 (5.4) was met. Hawaii's perinatal death rate appears to be in decline but like the other infant mortality measures are subject to variability due to small numbers.

The state infant, neonatal, and postneonatal mortality rates for 1994-2003 are presented in Chart 3-4.

**Chart 3-4 Mortality Rates for Infants (residents) 1994-2003**



Source: Hawaii State. Department of Health. Annual Report: Statistics Supplement (Honolulu).

## **DIRECT HEALTH CARE AND ENABLING SERVICES**

### **Financial Access to Health Care and Health-related Services**

Hawaii's Prepaid Health Care Act of 1974 is the only act of its kind in U.S. history. Since Jan. 1, 1975, this law has required nearly all employers to provide health insurance to their employees who worked 20 hours or more a week for four consecutive weeks. Employees must maintain the minimum of at least 20 hours a week to remain eligible. This has had a major impact in assuring that a large segment of Hawaii residents had health insurance coverage.

In 1997, Hawaii's medically uninsured was one of the lowest in the nation: 4% of the state's population. By 2002, according to the U.S. Census that number has more than doubled to 10%, about 123,000 people.

Other population surveys have produced a lower range of uninsured rates from 5-10% of the resident population. Using data from the annual 2003 Hawaii Health Survey, an estimated 4.6% of all women are uninsured in the state. The largest uninsured ethnic group was Native Hawaiian (7%), followed by Caucasian (6.4%), and Filipino (3.9%). Hawaii County had the highest percentage of uninsured residents (10%), followed by Kauai County (8.4%), Maui County (8%), and Honolulu (4.6%).

In the U.S. women of certain ethnic minorities have more difficulty accessing medical care compared to Caucasians. In Hawaii where everyone is an ethnic minority most access issues focus on Native Hawaiians,

Filipinos, Pacific Islanders or new immigrant groups. Women in these ethnic groups generally have worse maternal health and pregnancy outcomes as well as decreased access to prenatal and reproductive health care, than women from the other major ethnic groups. Because members of these groups also tend to reside in rural areas of the state they have limited access to both primary and tertiary care providers.

Furthermore, teens in several of these groups are more likely to get pregnant and may not access medical care without adequate psychosocial support. The perinatal system of care is generally weak in the area of providing adequate psychosocial support services for teens and young women. Coordination between physicians and support services must be improved to provide adequate educational and counseling services to new mothers.

### **Impact of shift of Medicaid coverage on financial barriers to care and service delivered by State and local agencies**

With the trend toward managed care, many insurance companies are assigning a “gatekeeper” for patients. The Hawaii Medicaid System (QUEST) plans are all managed care options. Most clients now have a Primary Care Provider (PCP) who is a family practice physician or internist. Under managed care, obstetricians (OB) are not considered PCPs, but specialists. Thus, when a woman becomes pregnant, her PCP refers her to an OB. However, in areas where there are limited numbers of OBs (like some areas on the neighbor islands), the doctors will only take a limited number of QUEST clients. Thus, pregnant women under QUEST must struggle to find appropriate OB care. Unfortunately, those ethnic groups, which have poor prenatal care rates and pregnancy outcomes are over-represented on the QUEST enrollments.

Prior to the inception of QUEST managed care in 1994, presumptive eligibility for newly enrolled pregnant women allowed early prenatal care to begin when a woman was confirmed pregnant. Under managed care, presumptive eligibility was eliminated. Pregnant women are now required to apply and qualify for Medicaid prior to an OB provider appointment. There is currently a shortened Medicaid application process for pregnant women and with administrative changes this processing time is less than two weeks (often a minimum of seven days but less than fourteen days) for the majority of Medicaid applications filed by pregnant women. The overall goal by Perinatal Providers and advocates is a 5 day application to eligibility process.

Low-income pregnant women may be eligible for medical assistance through Medicaid and low-income non-citizens from the Compact of Free Association countries are provided state-funded medical assistance. However, historically immigrants to Hawaii had barriers to pregnancy care without a medical emergency during or at the time of delivery. There has been some improvement to this barrier with passage of the 2004 Senate Bill 2939 Relating To Medical Assistance for Pregnant Legal Immigrants authorizing the Hawaii State Department of Human Services to provide state-funded medical assistance to pregnant legal immigrants who enter the United States on or after August 22, 1996, age 19 or older, whose family income does not exceed one 185% of the federal poverty level for Hawaii. Both the March of Dimes Hawaii Chapter and Mothers Care for Tomorrows Children advocated for passage of this bill.

## **Geographic accessibility**

The majority of tertiary health care facilities and specialty/sub-specialty facilities are located on the island of Oahu. The neighbor island facilities can accommodate routine obstetric care and labor and delivery. The island of Lanai has only one OB/Gyn who provides service for one day every month.

The costs of travel to and from the neighbor islands to Oahu for specialized or emergency care can be extremely burdensome for families with limited insurance coverage and income. Expenses include airfare (\$200 or more per roundtrip), food and lodging, plus additional uncovered medical costs.

The availability of quality emergency care can also be an issue for neighbor island residents. Parents have reported that at neighbor island emergency rooms that for infants/children may not be available, a persistent problem on some islands.

Other support and treatment services may be limited on the neighbor islands. For instance the island of Kaua'i has no drug treatment programs for pregnant women. Thus, women seeking treatment must relocate to Oahu for care. On Molokai 65% of deliveries are flown to Oahu and 35% of births on Molokai are delivered by Nurse Midwives. An OB/GYN flies to Molokai every two weeks to provide services and consult with the Nurse Midwives.

## **Cultural Acceptability**

As mentioned, certain ethnic groups are over-represented in the data with respect to poor pregnancy outcomes, limited use of prenatal care, increased rates of infant mortality, higher rates of domestic violence and substance use/abuse during pregnancy. Many existing health services are focused on reducing the disparity among ethnic groups and various populations. These include:

### **Malama A Ho'opili Pono Project**

The Malama A Ho'opili Pono Project was established on the Big Island of Hawaii in 1999 with funding from the federal Healthy Start Initiative. This project was successful in increasing community awareness and knowledge on perinatal health issues and improving interagency coordination. There continues to be a need to provide culturally appropriate care targeting Hawaiian, Hispanic, Pacific Islander women and adolescents through culturally appropriate outreach, health education and case management. Based on these needs this project will continue through May 2009 through a Health Resources and Service Administration "Eliminating Disparities in Perinatal Health" Grant. The Big Island Consortium with its four Local Area Consortia will make efforts to engage a diverse membership responsible for advocacy and advisory actions. This may include working with established ethnic/cultural groups to engage in related consortium actions. Focus groups will be completed to continue to assess target group needs. During Fall 2005 a Big Island Perinatal Summit will report to Big Island stakeholders and communities on five year project outcomes, present project data and client testimony, and discuss future directions in moving from state administration to community based contracts and the importance of consortium involvement. It is anticipated this community collaboration and commitment will increase the promotion of healthy perinatal outcomes and project sustainability.

### **Malama Na Wahine Hapai**

Malama Na Wahine Hapai is a rural health program operating on Kauai providing outreach and support services for Native Hawaiian women who are pregnant. Similar to the Malama Project on the island of Hawaii, the focus is on developing culturally acceptable interventions to reduce poor pregnancy outcomes for this population.

### **Pulama I Na Keiki**

Pulama I Na Keiki is a home-based prenatal education service specifically designed for Native Hawaiian infants on the island of Hawaii. The program provides parents with anticipatory guidance on child development to improving parenting skills to prepare children for school.

## **Availability of Prevention and Primary Care Services**

### **Providers**

Data on Hawaii's providers comes from the HMSA Foundation report, *Health Trends in Hawaii*. The annual publication is compiled by the Hawaii Health Information Corporation. HHIC is a private, not-for-profit corporation established in 1994 to collect inpatient discharge records from Hawaii's 22 acute care hospitals for each year since 1993. Its mission has expanded to collect, analyze and disseminate statewide health information in support of improving the health care system.<sup>54</sup>

Hawaii has fewer physicians per capita than the U.S. overall, with an average of 2.6 physicians per 1,000 resident population compared with 2.8 for the U.S. Of all active physicians, 36% were practicing as primary care physicians (PCPs), including general and family practitioners, internists, obstetrician/gynecologists, and pediatricians. This compares with the national average of 34% of physicians practicing as PCPs. Like the continental U.S., Hawaii's physicians are highly concentrated in a small urban area on Oahu. In 2002, about 79% were practicing on Oahu. Some of this discrepancy is due to tertiary care service available only on Oahu. Hawaii and Maui counties have the lowest concentration of physicians at 1.94 physicians per 1,000.

The number of registered nurses (RNs) in Hawaii has steadily increased between 1990 and 2002 from 7.0 per 1,000 to 7.8. Oahu has the highest concentration of RNs at 8.1 RNs per 1,000. Maui and Hawaii counties have the lowest number at 6.8 and 6.9 RNs respectively. Hawaii has 361 Advanced Practice Registered Nurses; of these 36 are nurse midwives.

Like many areas around the U.S., Hawaii is facing a shortage of doctors due to rising malpractice costs. One of the critical shortage areas for women and infant health is obstetrics. In the field of obstetrics, the number of doctors who handle infant deliveries and provide care to the mother dropped by 9% to 146 statewide in the past 2 years according to a recent survey conducted by the Hawaii chapter of the American College of Obstetricians and Gynecologists. Moreover, 42% of Hawaii Ob-Gyns plan to quit obstetrics, with 29% planning to stop delivering babies in the next 5 years.

The neighbor island situation is particularly grave: 67% plan to quit by 2009. The majority cited the risk of getting sued as the main reason for curtailing their practice. Tort reform policies are being considered at the state Legislature to address the potential shortages.

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<sup>54</sup> Hawaii Health Trends data is available online at [www.healthtrends.org](http://www.healthtrends.org).

**Facilities**

There are twenty-five acute care facilities statewide, one of which is Tripler Army Medical Center which supplies integrated services to all three service branches. Fourteen of the 25 hospitals are considered major community hospitals. Twelve are former state hospitals, now organized under the Hawaii Health Systems Corporation. Ten major community hospitals are located on Oahu. There are 6 Critical Access Hospitals serving remote areas.

There are 14 community health centers on three of the seven islands. These community centers provide Primary Care (usually inclusive of perinatal health care) services for the uninsured.

**Programs/Services****Women, Infant and Children Program (WIC)**

Hawaii's Women, Infants and Children (WIC) program provided supplemental foods, breastfeeding promotion, nutrition counseling and referrals to a monthly average of 3387 pregnant women, 2693 breastfeeding postpartum women, 2000 non-breastfeeding postpartum women and 8154 infants in federal fiscal year (FFY) 2004. WIC collaborates effectively with the primary care/community health centers in the state to provide WIC services and house WIC program personnel. A FQHC on the island of Molokai will take over services in July 2005 from the Hawaii Department of Health. Contracting with FQHCs has resulted in expanding integrated health service provision to low-income women and infants. The first cohort of breastfeeding peer counselors will be trained by October 2005 to promote breastfeeding initiation and duration rates. An electric breast pump loan program continues, with over 300 pumps available. WIC continues to collaborate in the areas of childhood immunizations, breastfeeding, oral health, and referrals to health and social services. Recommendations in a Unit Cost/Best Practices report is expected by October 2005 to streamline services while containing costs and maintaining satisfaction among staff and participants as well as clinical outcomes. Canned salmon was approved as an alternative to canned tuna for breastfeeding women to reduce exposure to methyl mercury. A statewide Neonatal Breastfeeding Outreach Campaign in 2004 resulted in 40 hospitals, community organizations and WIC agencies receiving "A Premie Needs His Mother" and 200 physicians, nurses and community health workers attending a presentation to improve breastfeeding rates for premature infants. The Prenatal Outreach Campaign in 2004 contacted 552 providers on Oahu to improve referrals to WIC.

**State Perinatal Health Support Services**

The Perinatal Health Support Services (PHSS) Program, funded by the Hawaii Department of Health's Maternal and Child Branch, is designed to provide case management and support services to women at risk for poor birth outcomes. Perinatal support services are provided through contractual arrangements on the islands of Kauai, Lanai, Maui, Molokai, and Oahu. The island of Hawaii receives direct services through the State Maternal and Child Support Services Malama A Ho'opili Pono Project.

**State Family Planning Program**

The Title X Family Planning Program (FPP) is contracting with Community Clinics and Private Medical Doctors on six islands to provide subsidized services to uninsured women and men at 47 clinic locations



statewide. During 2004 the FPP provided 18,986 total family planning related medical encounters and 15,080 clinical educational visits.

Title X also funded contracts with eleven community agencies to provide preventive health education services. Eleven half-time health educators provide outreach services and community health services with a focus on high risk populations including adolescents, males, homeless, disabled and substance abusers. There were 42,694 direct and 488,076 indirect client contacts during community education and outreach during fiscal year 2004. Reaching populations with Limited English Proficiency (LEP) as part of a broader national effort is also a Hawaii FPP priority and FP information has been translated into nine culturally significant languages broadcast through KNDI Radio.

Unintended pregnancy as a MCH priority will focus on reduction of unintended pregnancies in Hawaii and activities to reduce the current 2004 indicator of 49.6%. The FPP with partnerships addresses unintended pregnancy by increasing awareness of FP population-based services including Emergency Contraception (EC). 2003 legislation allows Hawaii pharmacists to dispense EC following training and collaborative agreements with physicians. Through partnerships and support by Healthy Mothers Health Babies Coalition of Hawaii there are currently 145 pharmacists in 36 Hawaii pharmacies able to provide EC, with related assessment, counseling, education and appropriate referrals. During the 2005 legislative session House Concurrent Resolution No. 10, HD1, SDI was adopted requesting that an EC Interagency Work Group develop a mechanism to effectively disseminate EC information statewide. The current EC Access Work Group will expand partnerships to increase EC awareness messages.

#### **Hawaii Healthy Start**

Hawaii Healthy Start is an early intervention program servicing families with children 0-3 years of age. This is a nationally recognized program that has been replicated in the U.S., Canada, and the Philippines. The Healthy Start program provides universal hospital based screening and assessment of all women delivering at local hospitals. Those women who are identified to be at-risk are offered home visitation services. Home visiting services are provided by paraprofessionals with extensive training, supervised by clinical staff.

This program serves the environmentally at-risk population as defined in the Individuals with Disabilities Educational Act (IDEA). Enrollment into the program is allowed during the first three months of the infant's life. Healthy Start is administered under the MCH Branch of FHSD. Services are provided throughout the state through private agency contracts.

#### **Early Head Start program**

The Early Head Start program is funded through the U.S. Department of Health and Human Services to provide support services to low-income families, particularly teens, while they are pregnant until their child reaches the age of three. Families are encouraged to register with the regular Head Start programs, which service low-income families with children 3-5 years. Early Head Start staff includes outreach workers, educational specialists and social workers.

**GRADS (Graduation Reality and Dual Skills)**

The GRADS program in the public high schools provides support to pregnant and parenting teens by enhancing the students' regular classes with life skills learning, such as budgeting, parenting, cooking, and other issues.

**Baby S.A.F.E.**

Baby S.A.F.E. (Substance Abuse Free Environment) provides outreach and support services for substance using women who are pregnant. Services are provided by paraprofessionals who conduct outreach to women using drugs, at-risk of using drugs (those with previous history of use), or in substance abusing environments. Certified substance abuse counselors service mothers who agree to receive treatment. The program provides services through three agencies located at 4 sites in the state.

**Access to Specialty Care when Needed**

Tertiary care centers are located only on the island of Oahu. There is limited access to specialty obstetric care on the neighbor islands and in rural Oahu for high-risk pregnant women. All high-risk deliveries are scheduled at Level III hospitals on Oahu or flown in by air ambulance in an emergency. On Lanai, pregnant women receive prenatal care from Family Practice physicians and the obstetrician flies in once a month. No deliveries occur on Lanai (except precipitous labor emergencies) births are planned for delivery on the islands of Oahu or Maui. On Molokai, certified nurse midwives provide perinatal care to pregnant women and perform low-risk vaginal deliveries on the island. An obstetrician flies to Molokai twice monthly to see patients and provide supervision to the midwives; all other births occur on Oahu or Maui.

Hawaii continues to have no formal designation of NICU by level. Based on capabilities of Level III Centers nationwide, Kapiolani Medical Center for Women and Children and Tripler Army Medical Center report themselves as Level III. Kaiser Medical Center has the capacity to handle most high-risk deliveries, caring for premature ventilated babies in their own NICU. Kaiser does not transfer mothers out to other facilities based on risk of delivering a low birth weight baby, but do not declare themselves Level III because of certain gaps in pediatric subspecialty services. For this measure, Kaiser is considered Level III.

Table 3-7 shows the number and percentage of resident births at the top five labor and delivery facilities in the state using data for 2003. Four of the five sites are located on the island of Oahu. It appears that most high-risk deliveries are being handled at the major tertiary (Level III) care facilities in the state.

The trend of very low birth weight infants delivered in Hawaii at facilities for high-risk deliveries and neonates has remained relatively stable after a short decline a decade ago. Very low birth weight infants are more likely to survive and thrive if they are born/cared for in an appropriately staffed and equipped facility with a high volume of high risk admissions. The percentage of VLBW infants delivered at tertiary care centers was 87% in 2003.

<b>Table 3-7 Birth Weights at Tertiary Delivery Locations (residents), Hawaii, 2003.</b>								
<b>Facility</b>	<b>All Births</b>		<b>Very Low Birth Weight</b>		<b>Low Birth Weight</b>		<b>Normal Birth Weights</b>	
	<b>No.</b>	<b>% of all live births</b>	<b>No.</b>	<b>% of all VLBW</b>	<b>No.</b>	<b>% of all LBW</b>	<b>No.</b>	<b>% all normal weight</b>
Kapi'olani Medical Center Level III Facility	6,039	33.4%	139	55.2%	713	45.9%	5318	32.2%
Tripler Army Medical Center Level III Facility	2,764	15.3%	36	14.3%	199	12.8%	2563	15.5%
Kaiser Foundation Hospital Level II Facility	2,084	11.5%	44	17.5%	195	12.6%	1887	11.4%
Maui Memorial Medical Center	1,668	9.2%	4	1.6%	82	5.3%	1586	9.6%
Queen's Medical Center	1,602	8.9%	5	2.0%	108	7.0%	1493	9.1%
Source: Hawai'i State Department of Health, Office of Health Status Monitoring. Vital Statistics Data. 2003								

## POPULATION-BASED SERVICES

### MothersCare for Tomorrow's Children

The MothersCare for Tomorrow's Children is funded through a purchase-of-service contract with PHSS. This program manages a statewide phoneline that provides prenatal information, service referrals, and an incentive program to encourage women to obtain early and continuous prenatal care. In 2004, the MothersCare phone line received over 650 calls and made 1,517 referrals. MothersCare provided leadership for the Hawaii Breastfeeding Challenge "Latch-on" as part of the national 2003 and 2004 Breastfeeding Campaign. During the 2003 event over 250 mothers statewide in unison breastfed their babies to promote breastfeeding during the first six months of an infant's life, and to increase public and employer support for breastfeeding.

### Healthy Mothers, Healthy Babies Coalition

Healthy Mothers, Healthy Babies Coalition of Hawaii (HMHB) is a member of the national HMHB Coalition, founded 20 years ago to increase efforts nationwide to improve the health of women of childbearing age and their infants. As part of its Title V and PHSS purchase-of-service involvement HMHB develops educational materials, provides advocacy on perinatal access and concerns, and initiates public/private collaborative education and policy change.

HMHB facilitates the Perinatal Advocacy Network (PAN) in legislative advocacy and related informational sessions. Locally and nationally physicians are leaving or not entering obstetric practice due to the high rising malpractice rates, which may in-turn affect access to perinatal care. The American College Of Obstetricians

and Gynecologists (ACOG) Hawaii Chapter presented to PAN on Medical Tort Reform to increase awareness of this service delivery and access issue. Medical Tort Reform legislation was developed and heard during the 2005 legislative session to address this issue but did not pass.

A PRAMS “Dental Problems and Dental Utilization During Pregnancy” presentation to PAN showed a high (59%) prevalence of pregnant women do not seek dental care during pregnancy, and that 35% of women reporting a dental problem did not seek care. Public health knowledge that periodontal disease in pregnancy has been increasingly linked to prematurity is a particular concern. In response to this concern, in 2005 legislation to expand Medicaid/QUEST to provide periodontal care to women was introduced with support by HMHB, March of Dimes Hawaii Chapter and ACOG –Hawaii Chapter. House Bill 2012 to expand Medicaid/QUEST for periodontal care to pregnant women did not pass and may be reintroduced during the 2006 legislative session.

HMHB produces the “Healthy and Hapai Pregnancy Calendar” with perinatal health education messages. Approximately 3,000 calendars are annually distributed in collaboration with MothersCare and other agencies. HMHB provides a variety of perinatal trainings including statewide perinatal provider training on smoking cessation brief intervention methods. As part of its PHSS work HMHB took a primary role in planning for the 2003 and 2004 Perinatal Summits. With Tobacco funding HMHB is operating a Warmline to provide telephone support to pregnant women to quit smoking. As a nonprofit agency, HMHB also develops funding support for these efforts from private contributions and foundations.

#### **March of Dimes**

The March of Dimes (MOD) Hawaii Chapter promoted with partnership support from Title V and other health organizations eight Statewide Town Hall meetings to embark on a 5-year campaign to increase awareness about rising preterm birth rates and ways to address this problem. Hawaii MOD also held a Prematurity Summit where Title V staff again presented related data. This Summit was teleconferenced to statewide medical centers as another large scale Hawaii prematurity campaign activity.

#### **Healthy Start**

Historically, the local Hawaii Healthy Start program served 50% of the high-risk families in the state, but was court-mandated to serve all high-risk families by June 30, 2001. Healthy Start works toward the reduction of child abuse by providing early identification screening and assessment services (hospital-based) and home visitation paraprofessional services to families identified at risk for child abuse and neglect. Services are provided for children up to 3 years of age.

#### **Hawaii's Newborn Metabolic Screening Program**

Hawaii's Newborn Metabolic Screening Program is administered through the FHSD Children with Special Health Needs Branch (CSHNB). The program has statewide responsibilities for assuring that all infants born in Hawaii are tested for PKU, congenital hypothyroidism, congenital adrenal hyperplasia, galactosemia, sickle cell and other hemoglobinopathies, biotinidase deficiency, and maple syrup urine disease. The program assures all infants receive testing and that infants with the specified diseases are provided with appropriate and timely treatment. Legislation in 1996 established a special fund for newborn screening, which made it possible for the program to collect fees, contract with a centralized laboratory, and expand the newborn screening test

panel to seven disorders. The program works with birthing facilities, primary care providers, midwives, medical specialists, centralized laboratory in Oregon, local laboratories, Healthy Mothers Healthy Babies, and others to implement the program. In 2004, 99.7% of newborns were screened statewide.

#### **Newborn Hearing Screening Program**

Hawaii's Newborn Hearing Screening Program is also administered through CSHNB. The program is supported by a 1990 law which mandated the Department of Health to develop methodology to establish, implement, and evaluate a statewide program and develop guidelines for screening, identification, diagnosis, and monitoring of infants and children to age 3 years with hearing impairment. Screening began in two Honolulu hospitals in 1992, and all birthing facilities in Hawaii were screening by the end of 1999. The program works with birthing facilities, primary care providers, medical specialists, audiologists, parents, early intervention services, and others to implement the program. In 1999, 97.8% of newborns were screened statewide. In April 2000, CSHNB received a universal newborn hearing screening grant (Hawaii Early Childhood Hearing Detection and Intervention Project), from the federal Maternal and Child Health Bureau. The project's purpose is to further develop and refine the system of screening, assessment, and early intervention services for young children with hearing loss or impairment, so these children will reach developmentally appropriate milestones for language and communication.

#### **Hawaii Immunization Coalition**

The Hawaii Immunization Coalition is a statewide, community-based coalition of public and private agencies, which ensures that all of Hawaii's children are appropriately immunized against vaccine-preventable diseases. Activities include data collection, statewide distribution of educational materials, and review of policies that affect immunizations. The Coalition also coordinates training for health professionals and organizations on current immunization issues and works in collaboration with community partners to address concerns regarding access to care for at-risk populations.

#### **People Attentive to Children (PATCH)**

PATCH tracks the available roster of all licensed childcare providers for the general public to access services. The agency also provides training for the providers to maintain their licenses. With so many working mothers in Hawaii access to safe and reliable childcare services is vital to reduce infant mortality and morbidity.

### **INFRASTRUCTURE BUILDING SERVICES**

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#### **Family Health Services Division (FHD)**

The internal capacity of the Title V agency to perform core public health services has been a major state priority since the last needs assessment. On the Title V state performance measure to monitor FHD core public health capacity, the Division ranked itself 21 out of a 30 point scale. Although public health capacity has improved over the past 5 years since the measure was developed, the degree of improvement has leveled off so the score has not changed since 2003.

In 2002, FHD conducted an assessment of its competencies in core public health using the Capacity Assessment for State Title V (CAST-5). CAST-5 is a set of assessment and planning tools designed to assist

state maternal and child health (MCH) programs to examine their organizational capacity to carry out the 10 MCH Essential Services. The tool was also used to:

- increase staff understanding of core public health functions and services
- analyze current resources
- encourage greater collaboration between program areas
- examine capacity related to specific functional areas.

As a result of the assessment, FHSD identified 2 priority areas to focus capacity building efforts: 1) expand/enhance numbers of staff with effective communication skills and 2) improve staff skills regarding collection and use of data. Priority one included strengthening the staff's ability to translate-communicate data, scientific, and programmatic information for diverse audiences. Priority two focuses on expanding the numbers of staff with epidemiological and analytical skills to interpret and use data, conduct research and evaluation, and identify common data sources for the MCH population.

In an effort to address the 2 priority areas, various training efforts have been employed through classroom training, in-service presentations, and use of federal technical assistance. While classroom based learning has broadened the general understanding of staff to the concepts of data use, interpretation and communication, evaluation of the impact of this training in practice settings has shown mixed results.

Although FHSD is one of the largest divisions in the DOH Health Resources Administration (with over 400 FTE), the Division continues to operate with limited epidemiological staff. Currently there is one vacant epidemiologist position located at the MCH Branch and an epidemiologist assigned by the Centers for Disease Control who works at the Division level, and is scheduled to leave at the end of August 2005 to return to Atlanta. While plans are underway to establish another epidemiologist position at the Division level, administrative approvals may delay this action for some time.

Given these limitations, the Title V agency will continue with the needs assessment process for the next five years. Although staff capacity and competency has improved through the experience, additional needs for technical assistance have become apparent. These needs are included in the Technical Assistance Request in the 2006 federal Title V Block grant application: 1) strategies and principles of collaboration with multiple and varied stakeholders; 2) logic model and; 3) assessment and analysis of the service system.

#### **Maternal and Child Health Branch, Women's Health Section**

During 2004 the Maternal and Child Health Branch of Family Health Services Division, integrated the Perinatal Health Section and Family Planning Services Section resulting in the creation of the Women's Health Section (WHS). A key component of the WHS is the Pregnancy Risk and Assessment Monitoring System (PRAMS) a population based surveillance system monitoring selected maternal risk factors before, during and after pregnancy.

National Women's Health Week 2005 became an initial stepping stone for the MCHB, WHS to promote its commitment to women's health. Population based activities included: Title V health screening message broadcasts through multi-cultural Radio Station KNDI to reach Chinese, Japanese, Laotian, Spanish, Vietnamese, Samoan, Tongan, Filipino and Marshallese populations on Oahu; Governor and Honolulu Mayor Proclamations; State and City and County women's health screening payroll stub messages; Department of

Health Newsletter “Keeping in Touch” articles with related data on the importance of lifestyle screening for women; DOH women’s health material poster session; Hawaii Department of Health women’s health screening e-card message circulated to DOH staff and providers; and mailing to 110 statewide faith based organizations requesting health screening message in church bulletins.

The WHS will be engaging other women’s health partners in a variety of discussions and activities to expand women’s health awareness. This will include reorganization of the Women’s Health Leadership Group initially through a smaller workgroup developing provider health education and screening materials on key women’s health issues. The WHS will also emphasize policy and program development for women’s issues across the lifespan. State and community-based partnerships supporting this effort are described below.

#### **Hawaii Perinatal Consortium (HPC)**

The Hawaii Perinatal Consortium began in 1999 to bring together diverse individuals and organizations to promote strategies for improving perinatal health. The HPC Data Committee promotes annual training for birth certificate registrars to improve the accuracy of data, primarily for birth weights. The HPC planned for 2003 and 2004 Perinatal Summits showcasing the latest perinatal health research, data and strategies to address prematurity, LBW, substance use, and depression. Title V is planning a Fall 2005 statewide strategic planning meeting to clarify the HPC role, its membership and overall strategies (relative to other perinatal groups).

#### **Hawaii Pregnancy Risk Assessment Monitoring System (PRAMS)**

The Hawaii Pregnancy Risk Assessment Monitoring System has been awarded its seventh year of funding by the Centers for Disease Control and Prevention. During 2004 Hawaii PRAMS obtained an exceptional 82% response rate. This project also expanded both data analysis and report dissemination on substance use (related to illegal drug use and preterm delivery); dental utilization and education during pregnancy; factors impacting pregnancy wantedness (socioeconomic, demographic, psychosocial and behavior); and insurance status (as a barrier to access for first trimester prenatal care). The value of Hawaii PRAMS is gaining increased recognition by perinatal stakeholders as an assessment tool and use for policy and planning of perinatal services. PRAMS data requests continue to be varied and include data on: breastfeeding, violence, contraceptive use/pregnancy wantedness, smoking/other substances and dental care issues. During 2006, a PRAMS Summary Report will be completed and disseminated to MCH partners. The report will include qualitative and quantitative data, lessons learned, and recommendations for data use.

#### **Behavioral Risk Factor Surveillance System**

The Behavioral Risk Factor Surveillance System is a national surveillance tool coordinated by the Centers for Disease Control (CDC) to gather state specific data on health risk behaviors through monthly telephone interviews with randomly selected adult residents. Data on women’s health generated from the survey is used to identify women’s health, perinatal and family planning health needs in the state.

#### **State Infant Mortality Collaborative (SIMC)**

SIMC was created by CDC to assist 5 selected states investigate adverse trends in state infant mortality rates. Participants were selected based on whether their IMRs were increasing, leveled off, or had a pattern of decline that was far less than expected. As state-specific infant mortality trends vary among states, the underlying determinants of these mortality trends may also differ. For Hawaii infant mortality rates have fluctuated increasing in both 2000 (7.6) and 2003 (7.3), significantly dropping during 2004 (5.1 provisional

data). Title V and other perinatal health partners (MOD, HMHB, University of Hawaii Department of Public Health Sciences and Epidemiology etc.) are part of the State Infant Mortality (SIM) state home team. The Hawaii Team has reviewed potential hypotheses for the rate patterns, methods and data sources to explore the infant mortality problem and explore protective factors to address IMR increases in the future. The Hawaii SIMC has developed an action plan including: data analysis and interpretation; assessing environmental systems of care; identification of training needs, additional team members or resources; overarching goals and objectives. An overall SIMC Toolkit is being developed to share with a larger national audience.

### **State Perinatal Support Services Program**

The Perinatal Health Support Services (PHSS) Program continues 10 direct service contracts for Perinatal Support Services to reach high-risk pregnant women. Two additional contracts with MothersCare and HMHB provide perinatal health population based public health awareness and technical assistance to perinatal providers and other stakeholders. A PHSS Title V workgroup includes staff from the Malama A Ho’opili Pono Project and the Baby Safe Program to redesign the data collection system and evaluate the PHSS service delivery model to improve support services. These actions will improve the Title V contract system to capture information on service delivery for linkage between the PHSS Program and the Family Planning Program. The system will also ensure preconception and interconception care for these program clients. In 2003 PHSS and FPP began to jointly monitor Community Health Centers where both services are located. As a result, staff has an increased understanding of the gaps and overlap in services. With the WHS in place it is now possible to assess how WHS programs and contracting can be improved to prevent unintended pregnancy in the context of promoting women’s health.

Title V health priorities (i.e. Substance abuse etc.) are being reviewed to improve PHSS assessment, service delivery and related provider training. A Title V Violence Prevention workgroup includes broad MCHB representation including the PHSS and FPP programs. During 2005 providers at six Oahu Community Health Centers participated in an onsite needs assessment process with consultants hired using funding from the Family Violence Prevention Fund. A needs assessment report has been developed and the Title V Violence Prevention workgroup will now review this information to assess how providers (including perinatal health and family planning) are implementing domestic violence protocols and related provider training needs.

Data generated by the PHSS purchase-of-service contracts (Baby SAFE, Perinatal Support, and Healthy Start) provide a rich source of information on clients in the public health service system. Analysis and interpretation of the data is needed to assess the effectiveness of services delivered to the at-risk perinatal population.

Healthy Mothers, Healthy Babies coordinated professional education on policy issues in 1999 and 2000 to support breastfeeding. The 1999 Meal Breaks Bill resulted in establishing the right for breastfeeding women to express breast milk in the workplace on their regularly scheduled breaks, if meal breaks are mandated for their workplace. With the passage of the Public Accommodation bill in 2000, women may now breastfeed in any public place in where they have a right to be with their infant. PHHS and WIC will assist in developing a private-public partnership of breastfeeding providers/advocates to design a public awareness campaign for the state promoting the benefits of breastfeeding.



### **Hawaii's Healthy Start Program**

The Healthy Start program continues its efforts to provide universal screening at birth for high-risk factors, which may lead to adverse outcomes. This home visitation program provides support to families identified at risk. There is potential to improve interventions based on evaluation and new knowledge of successful interventions related to prevention of adverse outcomes (improved attachment and bonding, school readiness, reduction of abuse or neglect, improved socialization skills for children, etc.) with funds obtained through the tobacco settlement. The program will be conducting a planning process to improve the services and develop expanded contracts for services. Healthy Start has also provided data to the Office of Hawaiian Affairs in an effort to secure additional resources for Native Hawaiian families.

### **Hawaii Birth Defects Program**

The Hawaii Birth Defects Program (HBDP) is a statewide, population based, multiple ascertainment source, active surveillance system. The surveillance system was ranked one of the top seven birth defect programs in the U.S.

Through data gathering from medical records at 33 facilities statewide, HBDP collects over 125 pieces of demographic, diagnostic, and health risk related information on each baby diagnosed with a birth defect, and their biological parents. Over the last 13 years, HBDP has collected data on cases diagnosed as adverse reproductive outcomes, including those that met the strict CDC criteria of a birth defect. Data is collected on live births, fetal demises, and medical terminations from conception through the first year of life. HBDP activities include dissemination of birth defects data and information, local and national presentations, publications included in national peer reviewed journals, annual data surveillance reports and special studies, and cluster evaluations and reports. A major focus involves a collaborative outreach effort in the area of folic acid for the prevention of neural tube preventable defects.

### **Infant Fetal Death Review**

Hawaii's Child Death Review Council, a voluntary public-private partnership, was established in 1996 to develop a comprehensive, statewide, multidisciplinary death review system to reduce preventable deaths for infants and children from birth to age 18. Infant mortality has increased slightly over the past 3 years. The case reviews may determine exact causes and circumstances surrounding infant deaths, which may generate important data and strategies to improve the system of perinatal services.

In 1997, Act 369 of the Hawaii Revised Statutes authorized the Department of Health to conduct child death reviews through standardized procedures to identify causes of death and recommend policies and strategies to prevent future deaths. Currently, the Council is finalizing standards and procedures through the review of all infant/child death cases for years 1996-97. At this time the Council does not review fetal deaths, but may consider this option in the future.

### **Hawaii Uninsured Project (HUP)**

The DOH has partnered with the HMSA Foundation to address the issue of the uninsured. Hawaii's Uninsured Project conducted a conference this past year to identify the issues surrounding the uninsured and to develop appropriate strategies. In January 2004 Hawaii was awarded \$3.2 million in RWJ Foundation funds for a three year project to implement universal health care coverage. Work continued in partnership with the University of Hawaii, Social Science Research Institute and Hawaii Institute of Public Affairs to identify

characteristics of the uninsured population, frame their issues, explore solutions with stakeholders, and conduct economic modeling of the various options.

The Hawaii Uninsured Project published *On Common Ground* in 2002 which outlined the issues around the uninsured. In 2005, HUP published *Pathways to Coverage* which outlined strategies endorsed by a broad cross-section of public and private stakeholders to expand coverage further. The State Department of Human Services, the agency which administers the Medicaid program for the state, has been an active participant in HUP and has implemented several reforms as a result. These include shortened application forms, passive renewal which have resulted in increased enrollment, and extending coverage to pregnant immigrant women.

### **Standards of Care/Guidelines/Monitoring/Evaluation**

All State Perinatal Support Services purchase-of-service contracts are monitored. Providers are required to give periodic reports to assure progress of the contract performance. Technical assistance is provided to contractors as needed.

Title V and Title X funding require annual reporting on a series of perinatal performance measures that incorporate national Healthy People 2010 objectives. Services and interventions are evaluated and revised based on annual performance measure indicators.

Federal grant funding for specific projects also require routine reporting and evaluation of both client outcomes and service provision. Many perinatal programs also maintain performance measures that are evaluated annually.

Standardized quality of care measures are used by Hawaii's largest public and private insurance providers. Thus data is available regarding the vast majority of health consumers on customer satisfaction and specific perinatal health outcomes. HEDIS measures which support integration of preconception/interconception care and promote women's health may be considered as potential contract performance measures in the future.

## CHILDREN WITH SPECIAL HEALTH CARE NEEDS

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### Introduction

Children with special health care needs (CSHCN) represent a significant population in Hawaii. Due to the complexity of their health needs, and the need to assure access to comprehensive, coordinated, community-based services, increasing attention has been focused on CSHCN. CSHCN are defined as children who have or are at risk for a chronic physical, developmental, behavioral, or emotional condition(s) and who require health and related services of a type or amount beyond that required by children generally (definition from federal Maternal and Child Health Bureau [MCH] Bureau).

As part of the national agenda for CSHCN, the MCH Bureau has established six core outcomes for CSHCN:

1. Families of CSHCN partner in decision-making at all levels and are satisfied with the services they receive.
2. CSHCN receive coordinated, ongoing, comprehensive care within a medical home.
3. CSHCN have adequate private and/or public insurance to pay for the services they need.
4. Children are screened early and continuously for special health care needs.
5. Community-based service systems are organized so families can use them easily.
6. Youth with special health care needs receive the services necessary to transition to adult life, including adult health care, work, and independence.

Hawaii's Title V needs assessment includes a focus on the six core outcomes for CSHCN.

### Priority Needs

As part of the assessment process, input was solicited from private and public stakeholders on the strengths, needs, opportunities, and challenges related to the core outcomes for CSHCN. Hawaii data from the National Survey of CSHCN related to the core outcomes were provided to stakeholders. Additional Hawaii data were gathered from various sources.

In selecting priority areas for CSHCN, consideration was given to the issue's or problem's extent, urgency/severity, whether it was amenable to change, propriety, economics, acceptability, resources, and legal basis. The following areas were selected as Title V State priority areas for CSHCN:

- Ensure that all infants and children receive appropriate and timely hearing evaluation and early intervention services. (*related to outcome #4*)
- Improve transition to adult life for youth with special health care needs. (*related to outcome #6*)

These priorities are only a few of the many areas that need to be addressed. Because the six core outcomes are inter-related, to achieve family-centered, comprehensive, coordinated, and community-based systems of services, all six core outcomes for CSHCN and their families must be addressed and services must be integrated into a larger "braided" service system. The following is a summary of other significant needs:

#### 1. Transitions

- Lack of centralized information regarding resources.
- With no less than 17 potential points of entry into the system of services for CSHCN, information on resources must be distributed, utilized, and appropriately and consistently shared with

- families. At any point of entry, the first point of contact should provide the necessary assistance in guiding families to the appropriate service.
- There needs to be a focus on the “little” transitions along the way, strengthening the knowledge base of families, community partners and the medical home, as well as targeting specific areas of improvement, in order to have a positive effect on the “big” transition to adulthood.
2. Navigating the system training
    - Families said that there are two critical transition points, where understanding the system is needed for making informed decisions. (a) Families whose children age 24-42 months who are exiting 0-3 and/or transitioning into the Department of Education special education would benefit in learning about the system, service array, and family advocacy. (b) Families whose children were ages of 11-14 year would benefit in learning about preparatory activities, resources, and the “process” for transitioning youth with special health care needs (YSHCN) to adulthood.
  3. Family resources for family support, leadership development, and training
    - While there are several agencies, programs, and community groups in one way or another providing support, training, and mentoring, these resources are not universally known by families.
    - There may also be a gap between what families need and what is offered, and resources may need to enhance their activities to better meet family needs.
  4. Family participation in decision-making
    - Finding “experienced” youth/families for advisory councils, or helping youth/families develop the skills and knowledge to be “advisors” can sometimes be difficult. Some agencies/programs are not aware of the potential advantages and opportunities with having family or youth advisors participate as decision makers on a policy level.
    - Families need more opportunities for leadership development and/or to be linked with programs. While some families have had training, such as through the Partners in Policymaking, they are not linked to programs in advisory capacities.
    - Opportunities are needed for YSHCN to build leadership and self-advocacy skills.
  5. Medical Home residency education program focused on integrated services
    - The University of Hawaii/Department of Pediatrics currently offers pediatric resident training that integrates a medical home approach. The training now needs to be expanded to the Family Practice Residents. The curriculum needs to be enhanced to cover transition to adulthood and role of the Medical Home in an integrated service system for CSHCN.
  6. Transition to adult health care.
    - Youths with developmental disabilities/mental retardation need additional support in transferring from pediatric to adult health care providers.
    - Pediatricians are concerned that the transition of youth with special health care needs to adult health care is time-consuming, and physicians do not receive any reimbursement for the time needed to contact adult health care providers and support the transition.
    - The Medical Home Project was able to set up the infrastructure to utilize the “Specialized Services” under the Waiver to reimburse physicians for the counseling and training required to transition these youth. However, this project has not yet been implemented, and physicians have not yet been informed about or engaged in transitioning youth in their practices.
  7. Developmental screening, referral and follow-up.
    - Few pediatricians conduct standardized developmental screening, and few physicians understand the system well enough to make the appropriate referral for additional services. Physicians may have difficulty getting children to test, lack of staff trained to screen, inadequate reimbursement, and sometimes no screening tool in the office.
    - Necessary linkages and connections have not been made to serve as an integrated service system from referral to assessment to intervention. While the system is better developed for children age 0-3 (under Part C of IDEA), it is less developed for children age 3-5 years.

## Data Sources

The Children with Special Health Needs Branch (CSHNB) in the Family Health Services Division (FHSD) of the Hawaii State Department of Health (DOH) was instrumental in gathering data for the needs assessment.

Data sources included:

- CSHCN Needs Assessment community meetings around the state, with over 200 parents and state/community partners, on the islands of Oahu, Kauai, Maui, and Hawaii. Each group was asked to identify the strengths and needs within their communities, and opportunities and challenges for system change, as related to the 6 outcomes. In partnership with CSHNB, these meetings were conducted and data were analyzed by the Family Voices of Hawaii State Coordinator.
- Hawaii data from the National Survey of CSHCN, 2001. This population-based telephone survey was sponsored by the MCH Bureau and conducted by the National Center for Health Statistics. Children were screened in all 50 states to identify CSHCN under age 18 years. Sample numbers were weighted and adjusted for total population of Hawaii. Hawaii data were analyzed by CSHNB and reported in “A Family View of Children with Special Health Care Needs – Hawaii 2001” (Appendix 5-A). Hawaii data were also obtained from the Data Resource Center for Child and Adolescent Health, [www.nschdata.org](http://www.nschdata.org).
- Hawaii data from the National Survey of Children’s Health, 2003. This population-based telephone survey was sponsored by the MCH Bureau and conducted by the National Center for Health Statistics. Families who were surveyed were also screened to identify CSHCN under age 18 years. Sample numbers were weighted and adjusted for total population of Hawaii. Hawaii data were analyzed by the CSHNB and reported in “A Family View of Children’s Health in Hawaii: Children With and Without Special Health Care Needs, 2003” (Appendix 5-B). Hawaii data were also obtained from the National Survey of Children’s Health Data Resource Center, [www.nschdata.org](http://www.nschdata.org).
- Data and information from federal, state, and community agencies, including: DOH – Office of Health Status Monitoring (births, deaths), HIV/AIDS Surveillance Program (AIDS prevalence), Asthma Control Program (asthma prevalence); Hawaii Medical Services Association – “Health Trends In Hawaii 2003” (physician numbers); Department of Education (students under Part B or IDEA); Department of Human Services (EPSDT data); Social Security Administration (SSI data); Hawaii Maternal and Child Health Leadership in Education in Neurodevelopmental and Related Disabilities (MCH LEND); and others.
- Data and information from CSHNB programs and projects include:
  - Newborn Metabolic Screening Program (NBMS) – statewide screening and follow-up data.
  - Newborn Hearing Screening Program (NHSP) – statewide screening and follow-up data.
  - Genetics Program – genetics services in Hawaii.
  - Hawaii Birth Defects Program (HBDP) – statewide birth defects surveillance data.
  - Children with Special Health Needs Program (CSHNP) – study of need for vision and hearing screening in elementary and middle schools in two school districts on Oahu, 2000; “safety net” services.
  - Early Intervention Section (EIS), lead agency for Part C of the Individuals with Disabilities Education Act (IDEA) within the Hawaii State Department of Health – information on children served under Part C. EIS also conducted family support survey to gather information from families who are or were utilizing early intervention services, regarding their opinions of services and supports received; and held focus groups statewide to study the different types of support families would find useful, from initial identification throughout their enrollment in early intervention and transition to the next setting.
  - Preschool Developmental Screening Program (PDSP) – program data on referrals received for children with developmental/behavioral concerns.
  - Healthy Child Care Hawaii (HCCH) – survey of primary care pediatricians for young children, 2001. The survey included developmental, hearing, and vision screening practices and barriers. HCCH is a collaborative project of CSHNB, University of Hawaii/School of Medicine/Department of Pediatrics, and American Academy of Pediatrics-Hawaii Chapter.

## POPULATION DATA AND HEALTH STATUS

### Prevalence

The prevalence of CSHCN in Hawaii is 11.0-15.0%, based on Hawaii data from the National Survey of CSHCN and the National Survey of Children's Health (Table 4-1).

<b>Table 4-1. Prevalence of Children with Special Health Care Needs, Hawaii, 2001 &amp; 2003</b>		
	<b>National Survey of CSHCN (2001)</b>	<b>National Survey of Children's Health (2003)</b>
% of CSHCN among children age 0-17 years	11.0%	15.0%
% of households with children that have CSHCN age 0-17 years	16.4%	-
Number of CSHCN age 0-17 years	32,500	44,310
Source: Hawaii data from the National Survey of CSHCN, 2001, and National Survey of Children's Health, 2003. Analysis by the Hawaii State Department of Health, Children with Special Health Needs Branch, 2004 and 2005.		

The prevalence of CSHCN by demographic variables is shown in Table 4-2. Data indicate that the prevalence of CSHCN rises with age, more males than females have special health care needs, CSHCN cross all income levels, and Asians have a lower prevalence rate compared to other race/ethnic groups.

<b>Table 4-2. Prevalence of CSHCN by Age, Sex, Income, and Ethnicity, Hawaii, 2001</b>	
	<b>% Children Age 0-17 Years</b>
<b>Prevalence By Age</b>	
Children 0-5 years	6.6
Children 6-11 years	12.8
Children 12-17 years	13.4
<b>Prevalence By Sex</b>	
Male	12.4
Female	9.4
<b>Prevalence By Poverty Level</b>	
0%-99% FPL	10.8
100%-199% FPL	10.3
200%-399% FPL	11.8
400% FPL or greater	12.6
<b>Prevalence By Race/Ethnicity</b>	
Hispanic	12.2
White (non-Hispanic)	12.3
Black (non-Hispanic)	12.4
Multi-racial (non-Hispanic)	11.4
Asian (non-Hispanic)	6.7
Native American/Alaskan Native (non-Hispanic)	*
Native Hawaiian/Pacific Islander (non-Hispanic)	11.2
* Due to the small size of this group, data were suppressed to protect respondents' confidentiality. Source: Hawaii data from the National Survey of CSHCN, 2001. Analysis by the Data Resource Center for Child and Adolescent Health, <a href="http://www.nschedata.org">www.nschedata.org</a> .	

## Health Status

Hawaii data from the National Survey of CSHCN show the overall CSHCN health status (Table 4-3).

<b>Table 4-3. Overall CSHCN Health Status, Hawaii, 2001</b>	
	<b>% CSHCN</b>
CSHCN whose health conditions affect their activities usually, always, or a great deal	22.0
CSHCN with 11 or more days of school absences due to illness	12.2
Source: Hawaii data from the National Survey of CSHCN, 2001. Analysis by the Data Resource Center for Child and Adolescent Health, <a href="http://www.nschdata.org">www.nschdata.org</a> .	

Hawaii data from the National Survey of Children's Health show that compared with children without special health care needs, CSHCN have significantly poorer health; more moderate/severe health problems; miss more school due to illness/injury; have more concerns regarding learning, development, or behavior; and have more difficulties with emotions, concentration, behavior, and getting along with others (Table 4-4).

<b>Table 4-4. Overall Comparison of Health Status of Children With and Without Special Health Needs, Hawaii, 2003</b>			
	<b>% CSHCN</b>	<b>% Children Without Special Health Care Needs</b>	
Children whose overall health is excellent or very good	72.1	89.2	★
Children with health problems rated as moderate or severe by parents	37.3	0	★
School age children who missed 11 or more days of school in past year due to illness or injury	11.3	2.9	★
Children age 0-5 whose parents have one or more concerns about child's learning, development, or behavior	61.4	39.8	★
Children age 3-17 with moderate or severe difficulties in the area of emotions, concentration, behavior, or getting along with others	31.3	3.2	★
★ Statistically significant difference between CSHCN and Not CSHCN rates at the 95% confidence interval. Source: Hawaii data from the National Survey of Children's Health, 2003. Analysis by the Data Resource Center for Child and Adolescent Health, <a href="http://www.nschdata.org">www.nschdata.org</a> . Statistical analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2005.			

## Health Conditions

The Hawaii data from the National Survey of CSHCN and the National Survey of Children's Health show similar data for the general health care needs of CSHCN (Table 4-5).

<b>Table 4-5. General Health Care Needs of CSHCN, Hawaii, 2001 &amp; 2003</b>		
	<b>National Survey of CSHCN (2001)</b>	<b>National Survey of Children's Health (2003)</b>
% CSHCN, who have a medical, behavioral, or other health condition that has lasted or is expected to last 12 months or longer, and:		
Need or use medicine prescribed by a doctor	69.3 %	69.6%
Need or use more medical, mental health, or educational services than is usual for most children of the same age	45.5%	38.9%
Are limited or prevented in his/her ability to do things most children of the same age can do	28.8%	28.3%
Need or get special therapy, such as physical, occupational or speech therapy	21.0%	21.3%
Have an emotional, developmental or behavioral problem that lasted or is expected to last 12 months or longer	14.1%	14.6%
Source: Hawaii data from the National Survey of CSHCN, 2001, and National Survey of Children's Health, 2003. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2004 and 2005.		

Hawaii data from the National Survey of Children's Health provides some information on the health conditions of CSHCN, although the list is incomplete (Table 4-6). Families said that 44% of the health conditions or limitations were "moderate" or "severe".

<b>Table 4-6. Some Health Conditions of CSHCN, Hawaii, 2003</b>	
	<b>% CSHCN</b>
Parent has been told by a doctor or health professional that their child has this condition:	
Asthma	46.4
Attention Deficit Disorder (ADD) or Attention Deficit Hyperactive Disorder (ADHD) ( <i>children &gt;24 months</i> )	25.6
Behavioral or conduct problems ( <i>children ≥24 months</i> )	20.3
Depression or anxiety problems ( <i>children ≥24 months</i> )	14.8
Any developmental delay or physical impairment	13.6
Bone, joint, or muscle problems	9.1
Frequent or severe headaches, including migraines, in past year ( <i>children ≥36 months</i> )	8.5
Stuttering, stammering, or other speech problems, in past year ( <i>children ≥36 months</i> )	8.4
Hearing problems or vision problems that cannot be corrected with glasses or contact lenses ( <i>children ≥24 months</i> )	6.4
Autism	1.7
Diabetes	0.5
Child's health condition(s) or limitation(s) is:	
Minor	54.4
Moderate	37.4
Severe	6.8
Source: Hawaii data from the National Survey of Children's Health, 2003. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2005.	

## **Birth Defects**

Birth defects surveillance data for 1986-2002 (Table 4-7) show that 4.5% of all infants/fetuses delivered in Hawaii had birth defects, and that 5.2% of all infants/fetuses delivered in Hawaii had adverse reproductive outcomes (birth defects, plus other health conditions such as neoplasms, congenital infections, and maternal substance use during pregnancy). The most common birth defects are cardiac & circulatory, limb & musculoskeletal, and genital & urinary conditions. The most common adverse reproductive outcome is maternal substance abuse.



<b>Table 4-7. Birth Defect and Adverse Reproductive Outcome Rates, Hawaii, 1986-2002</b>			
	<b>Rate</b>		<b>Rate</b>
<b>Birth Defect</b>		<b>Adverse Reproductive Outcome</b>	
<b>Hawaii birth defects rate</b>	<b>4.5%</b>	<b>Hawaii birth defects rate</b>	<b>5.2%</b>
Major categories (per 10,000 births):		Major categories (per 10,000 births):	
Cardiac & circulatory	189.8	Maternal substance abuse	77.9
Limb & musculoskeletal	127.0	Neoplasms	10.0
Genital & urinary	106.3	Congenital infection	7.7
Orofacial & gastrointestinal	57.5		
Skin & integument	56.6		
Chromosome & syndrome	53.9		
Eye, ear, face, & neck	43.2		
Brain & nervous system	39.8		
Respiratory	23.8		
Source: Hawaii Birth Defects Program, December 2003. "1986-2002 Statewide Data, Surveillance Report Number 11 on Birth Defects in Hawaii".			

#### Children Age 0-3 Served Under Part C of IDEA

Children age 0-3 years with or at risk for developmental delays are served through the Department of Health's Early Intervention Section (lead agency for Part C of Individuals with Disabilities Education Act [IDEA]), Healthy Start, and Public Health Nursing Branch. Data for 2004 show that 7.3% of the 0-3 population are receiving early intervention services, of which 4.4% have a developmental delay or are at biological risk, and 2.8% are at environmental risk (Table 4-8).

<b>Table 4-8. Children Age 0-3 Years With or At Risk for Developmental Delays, Part C of IDEA, Hawaii, 2004*</b>		
	<b># Children Age 0-3</b>	<b>% Population Age 0-3</b>
All children with or at risk for developmental delays ( <i>total</i> )	3,936	7.3%
Developmental delay or at biological risk	2,389	4.4%
At environmental risk	1,547	2.8%
* Child count on December 1, 2004. Source: Hawaii State Department of Health, Early Intervention Section, Annual Performance Report, 2005. The population estimate for 2003 is from Annual Report Tables for 2003 (U.S. Office of Special Education Programs), <a href="http://www.ideadata.org">www.ideadata.org</a> .		

#### Children and Youth Age 3-21 Served Under Part B of IDEA

Children and youth age 3-21 years with disabilities are served under Part B of IDEA by the Hawaii State Department of Education. In 2003, data show that 4.96% of children age 3-5 years, 10.27% of children age 6-17 years, and 1.03% of youth age 18-21 years are receiving special education services (Table 4-9).

<b>Table 4-9. Children Age 3-21 Years with Disabilities, Part B of IDEA, Hawaii, 2003</b>			
<b>Age Group</b>	<b># Children/Youth in Part B</b>	<b>Est. Population</b>	<b>% Population Served Under IDEA</b>
Age 3-5 years	2,284	46,027	4.96%
Age 6-17 years	20,220	196,859	10.27%
Age 18-21 years	762	74,324	1.03%
Source: U.S. Office of Special Education Programs, Part B Annual Report Tables for 2003, <a href="http://www.ideadata.org">www.ideadata.org</a> .			

The disability categories are shown in Table 4-10. For children age 3-5, the most common category is developmental delay. For children/youth age 6-17 years, the most common categories are specific learning disability, emotional disturbance, other health impairment, and mental retardation. For youth age 18-21 years, the most common categories are specific learning disability, mental retardation, and emotional disturbance.

<b>Table 4-10. Disability Categories for Children Age 3-5 Years, Part B of IDEA, Hawaii, 2003</b>			
<b>Disability</b>	<b>% Population Age 3-5 Years (N=2,284)</b>	<b>% Population Age 6-17 Years (N=20,220)</b>	<b>% Population Age 18-21 Years (N=762)</b>
All disabilities	4.96%	10.27%	1.03%
Autism	0.33%	0.30%	0.03%
Deaf blindness	0%	0%	0%
Developmental delay	3.46%	0.55%	-
Emotional disturbance	0.10%	1.38%	0.18%
Hearing impairment	0.13%	0.18%	0.03%
Mental retardation	0.05%	0.92%	0.23%
Multiple disabilities	0.12%	0.15%	0.04%
Orthopedic impairment	0.04%	0.05%	0.01%
Other health impairment	0.21%	1.06%	0.06%
Specific learning disability	0.02%	4.99%	0.43%
Speech or language impairment	0.48%	0.61%	0%
Traumatic brain injury	0.01%	0.03%	0.01%
Visual impairment	0.02%	0.03%	0%
* Based on 2003 population estimates			
Source: U.S. Office of Special Education Programs, Part B Annual Report Tables for 2003, <a href="http://www.ideadata.org">www.ideadata.org</a> .			

## Asthma

Based on data from the Behavioral Risk Factor Surveillance System (BRFSS), Hawaii has approximately 9.7% (28,600) children age 0-17 years who currently have asthma. Prevalence was highest for Hawaii County (12.2%), followed by City & County of Honolulu (9.5%), Maui County (8.6%), and Kauai County (8.5%). The BRFSS also showed that about 14.1% (41,600) children reported having asthma at some point in their lifetime. (Source: Hawaii State Department of Health/Asthma Control Program, "State of Asthma – Hawaii 2004".)

### Acquired Immunodeficiency Syndrome (AIDS)

As of September 15, 2003, of 1,248 persons living with AIDS, 0.3% were age 13 years or younger, and 0.2% were age 13-24 years. (Source: Hawaii State Department of Health/HIV/AIDS Surveillance Program, "Integrated Epidemiologic Profile of HIV/AIDS in Hawaii", May 2005.)

### Children & Youth with Disabilities Receiving SSI Payments

Data for children/youth 0-17 years with disabilities receiving SSI payments are shown in Table 4-11. Eligible children/youth must have limited income and resources, and have a chronic physical and/or mental condition that results in "marked and severe functional limitations". Data show that of children/youth receiving SSI payments, a greater proportion are in the older age groups, there are more males than females, and about 18% are not in their parent's household.

Table 4-11. Children/Youth Age 0-17 Years Receiving SSI Payments, Hawaii, December 2004					
	# CSHCN	% CSHCN		# CSHCN	% CSHCN
<b>Age (years)</b>			<b>Sex</b>		
0-1	77	5.4%	Male	912	63.4%
2-3	139	9.7%	Female	526	36.6%
4-5	143	9.9%	<b>Living arrangements</b>		
6-7	131	9.1%	Own household	159	11.1%
8-9	184	12.8%	Another's household	77	5.4%
10-11	185	12.9%	Parent's household	1,176	81.8%
12-13	199	13.8%	Medicaid institution	26	1.8%
14-15	192	13.4%			
16-17	188	13.1%	<i>Total</i>	1,438	100%

Source: Social Security Administration. Advance data provided to the Healthy and Ready to Work National Center, February 2005.

U.S. data on conditions for children and youth age 0-17 years receiving SSI payments include: mental retardation (23.8%), other mental disorders (40.1%), nervous system and sense organs (9.7%), congenital anomalies (4.9%), respiratory system (2.7%), blood and blood-forming organs (1.3%), neoplasms (1.0%), musculoskeletal system and connective tissue (0.8%), endocrine/nutritional/metabolic disease (0.7%), and other conditions (15.0%). (Source: Social Security Administration. Children Receiving SSI, December 2003.)

### Causes of Deaths

Causes of deaths for children/youth age 0-17 years include congenital anomalies and perinatal conditions (Table 4-12).

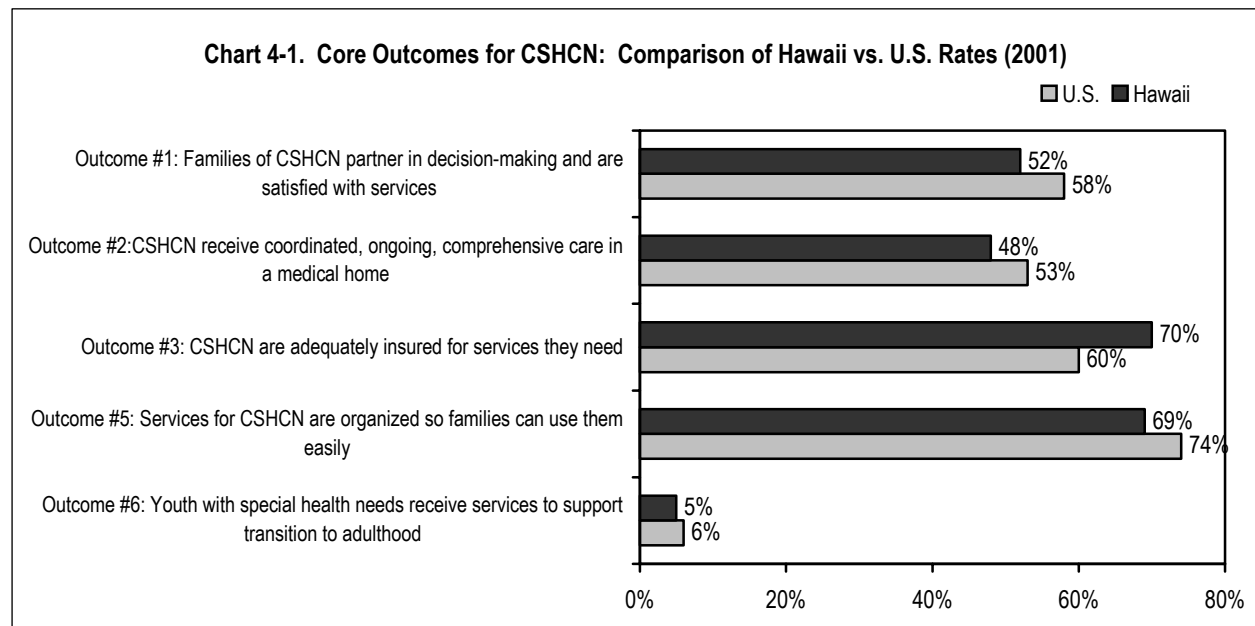
**Table 4-12. Causes of Deaths for Children Age 0-17 years, Hawaii, 2003**

	# Deaths	% Deaths
<b>Leading causes of infant deaths (N=131)</b>		
Short gestation	24	18%
Diseases of the circulatory system	9	7%
Maternal complications of pregnancy	7	5%
Hypoxia/asphyxia	5	4%
Other congenital anomaly	16	12%
Other respiratory condition	7	5%
Other hemorrhagic and hematologic disorder	6	5%
Other perinatal condition	6	5%
All other causes	51	39%
<b>Leading causes of death for children age 0-17 years (N=190)</b>		
Perinatal conditions	68	36%
Congenital anomalies	22	12%
Symptoms, signs, and ill-defined conditions, including sudden infant death syndrome (SIDS)	18	9%
All other causes	82	43%

Source: DOH/Office of Health Status Monitoring, Vital Statistics Report – 2003 ([hawaii.gov/health/statistics/vital-statistics/vr\\_03/index.html](http://hawaii.gov/health/statistics/vital-statistics/vr_03/index.html)).

### CSHCN Core Outcomes: Comparison of Hawaii vs. U.S. Rates

The National Survey of CSHCN provided data on five of the six core outcomes for CSHCN. A comparison of rates for Hawaii and U.S. (Chart 4-1) shows that Hawaii's low rate of 5% for outcome #6 on transition is comparable to the U.S. rate. While Hawaii's rate is higher than the U.S. rate for insurance, and lower for the other outcomes, these differences are not statistically significant.



Source: Hawaii data from the National Survey of CSHCN, 2001. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2004

## **CSHCN Core Outcome #1: Family Partnership in Decision-Making and Satisfaction**

Hawaii data on family partnership from the National Survey of CSHCN showed:

- 52% CYSHCN/families partner in decision-making at all levels and are satisfied with the services they receive. (*CSHCN core outcome measure*)
- 81% CYSHCN/families say their doctors usually/always made family feel like a partner.
- 55% CYSHCN/families were very satisfied with the services received.

Hawaii data on family partnership from the National Survey of Children's Health showed:

- 2.6% CSHCN did not receive all needed medical care, during the past 12 months. For CSHCN not receiving needed medical care, 48.2% families said that dissatisfaction with the doctor was a reason for not getting all the care needed.
- 4.6% CSHCN did not receive all needed routine preventive dental care, during the past 12 months. For CSHCN not receiving needed dental care, 8.2% families said that dissatisfaction with the dentist was a reason for not getting all the care needed.

State/community/family participants provided the following information on family partnership at CSHCN Needs Assessment community meetings throughout the state, 2004:

- Strengths:
  - There is evidence of long-term family participation and opportunities for family involvement because of mandated participation, covering CYSHCN from birth (Hawaii Early Intervention Coordinating Council) through adulthood (State Council on Developmental Disabilities).
  - CSHNB programs include families on their advisory committees. Family participation is encouraged and supported through invitation, engagement and compensation.
  - The Special Parent Information Network, the state Parent Training Institute, and Learning Disabilities Association of Hawaii provide opportunities for families to expand their knowledge through training and conferences about the Individuals with Disabilities Education Act (IDEA) and Section 504.
  - In some communities, the Community Children's Councils have been excellent vehicles for family professional partnerships to nurture into responsible self-directed teams making decisions and policy recommendations for their school community.
- Needs:
  - Families want increased access to information regarding services/resources for CYSHCN, in order to make appropriate decisions regarding their child's care and services.
  - Families want training in navigating the system so they are fully aware of the coordination, collaboration, and resources to support CYSHCN.
  - Families want training in their child's condition at the time of diagnosis and throughout the child's development.
  - Families want opportunities to participate and "share their story" with other families, providers, and policy makers, to help shape the service system for CYSHCN.
- Opportunities:
  - Focus on families transitioning out of Early Intervention; provide them with training to understand the system so they will be able to become better advocates for their children and to participate as partners at a system level.
  - Provide networking opportunities for families to interact with professionals and other partners in their own communities, to establish relationships outside of a medical encounter.
  - Encourage all programs to have families participate on Advisory Committees.
  - Capitalize on the strength of the Community Children's Councils which have demonstrated successful family professional partnerships as a community stakeholder.

- **Challenges:**
  - Opportunities for leadership development for families are restricted to the priority areas of “funders”. For example, Learning Disabilities Association of Hawaii focuses only on the skills families need to navigate services under IDEA. It does not include navigating the health care system, or how to build partnerships within the Medical Home.
  - Service planning processes and protocols within the Department of Education, DOH/Developmental Disabilities Division, and Medicaid Waiver are based upon a process that require the families to identify needs first, and then families are informed of corresponding services. Families would prefer to know what the services are first, and then be able to explain their relevant needs. These processes lead to frustration and mistrust.

The Early Intervention Section conducted a family support survey to gather information from families who are or were utilizing early intervention services, regarding their opinions of services and supports received. This was relevant to the Early Intervention State Goal that family supports, services, and resources increase the family’s capacity to enhance outcomes for infants and toddlers and their families. Survey findings (Table 4-13) show that a high proportion of families are receiving needed services and supports.

<b>Table 4-13. Services and Supports for Families Receiving Early Intervention Services, Hawaii, 2004</b>	
	<b>% Families Who Agree or Strongly Agree (N=81)</b>
Families know who to talk to when they need help or have questions about services.	99%
Families got enough information or help when they needed it.	100%
Families got enough information to help them make informed decisions and choices about services for their child.	98%
Families' beliefs, traditions, and lifestyle were respected.	100%
Families were taught activities that helped their child grow and learn.	99%
Families were given activities that fit into their daily life.	98%
Child's services supported families' concerns, priorities, and resources	100%
Families have learned about other community resources and services.	93%
Source: Hawaii State Department of Health, Early Intervention Section, Annual Performance Report, 2005.	

The Early Intervention Section studied the different types of support families that would find useful, from initial identification throughout enrollment in early intervention and transition to the next setting. A “veteran” parent conducted focus groups statewide to gather information from families as to how Hawaii’s Part C System could better support families. Focus group findings showed the following:

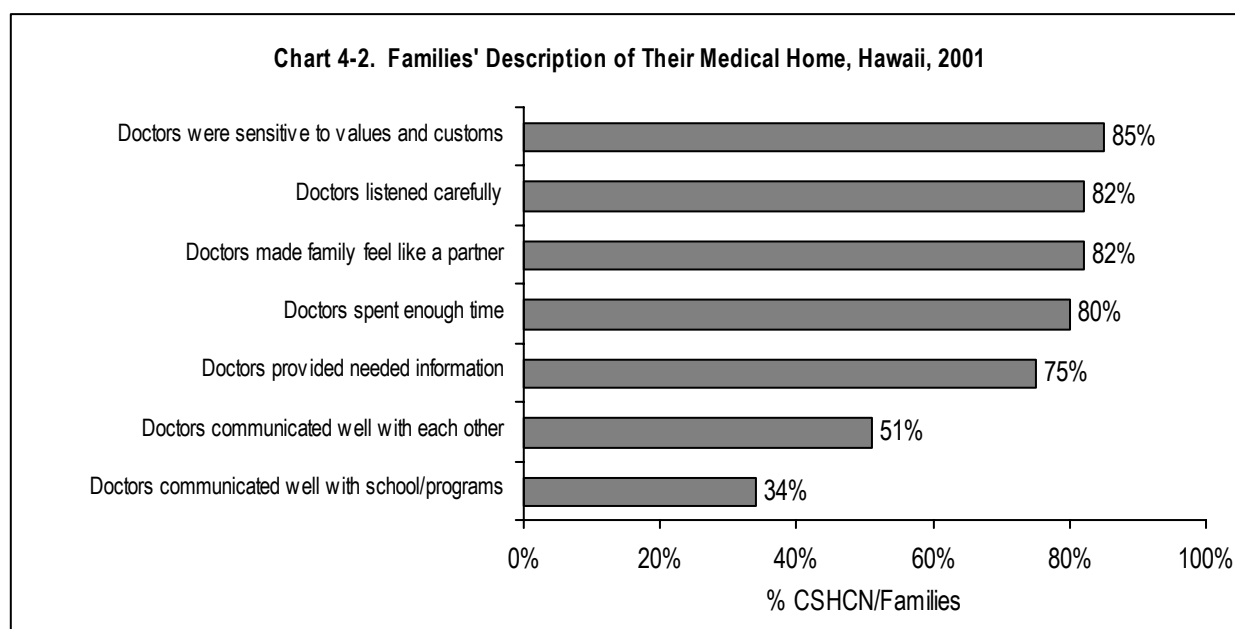
- **Preliminary findings**
  - Families want to speak with or meet other families who have “gone through the system.”
  - Families prefer a more informal setting, preferably as part of a group activity including parents and children.
  - Families were somewhat interested in a facilitated family group, but only if led by a parent mentor.
  - Families were least interested in an electronic network.
  - Parents would like to speak to other parents, but do not feel comfortable either calling a parent directly or calling a warm line; they would prefer to go through someone else and to be called by them.

- Some parents felt isolated, and their only link was the provider who came to their home.
- For some parents, the EI provider was like a “mental health therapist” who provided support for anxiety, depression, etc. As these families would have not gone for psychological counseling, having someone to talk to was a great benefit to both their child and themselves.
- Preliminary recommendations
  - Provide an array of family support options ranging from regularly scheduled “family and child get-togethers” to parent to parent phone support.
  - Provide periodic opportunities for family “in-services” or training.
  - Ensure any group facilitation is led by a parent mentor.
  - Provide meetings “outside” of IFSP meetings to bring together the team (including the family) to discuss the child’s condition and development, and to answer questions or concerns of the family.
  - Nurture the relationships built from the families that participated in these focus groups and continue the momentum, so they can see that their voice counts.

## CSHCN Core Outcome #2: Medical Home

Hawaii data on medical home from the National Survey of CSHCN showed:

- 48% CYSHCN receive coordinated, ongoing, comprehensive care within a medical home. (*CSHCN core outcome measure*)
- 98% CYSHCN had a usual place to go for sick care. 88% CSHCN had a usual place for preventive care. 88% CYSHCN had a personal doctor or nurse.
- 76% CYSHCN had no problems obtaining referrals when needed.
- 28% CYSHCN received effective care coordination when needed. This was based on children having professional care coordination when needed (74%), doctors communicating well with each other (51%) and with other programs (34%).
- Families’ description of their medical home is shown in Chart 4-2. In general, doctors are sensitive to values and customs, listen carefully, made families feel like a partner, and spent enough time. However, improvements were needed in the doctors’ communication with each other, schools, and other programs.



Hawaii data on medical home from the National Survey of Children's Health showed:

- 88.7% CSHCN have a personal doctor or nurse (health professional who knows child well and is familiar with child's health history).
- 79.1% CSHCN's personal doctor or nurse usually/always spent enough time with child. 93.4% CSHCN's personal doctor or nurse usually/always explained things in a way that family/child can understand.
- 98.2% families/CSHCN usually/always got the help or advice needed, when family called child's personal doctor or nurse over the phone. 90.6% CSHCN usually/always got care from his/her personal doctor or nurse as soon as wanted, when care was needed right away for an illness or injury.
- 14.2% CSHCN/families had a moderate/big problem getting care from specialist doctor(s) when needed. 83.1% CSHCN's personal doctor, nurse, or office staff helped family to get care from specialist doctor(s). 63.5% CSHCN's personal doctor or nurse usually/always talked with family about what happens during visits to specialist doctor(s).
- 100% CSHCN/families were able to usually/always get someone other than a family member to help speak with the doctors or nurses, when an interpreter was needed.
- Of CSHCN who did not receive all needed medical care during the past 12 months, 48.2% families said that a reason was that they couldn't find a doctor who accepted the child's insurance, and 13.6% said a reason was that their doctor did not know how to treat or provide care.
- Of CSHCN who did not receive all needed routine preventive dental care during the past 12 months, 30.1% families said that a reason was not convenient times or they could not get appointment, and 9.0% said that a reason was that they couldn't find a dentist who accepted child's insurance.
- Of CSHCN who did not receive all needed prescription medication during the past 12 months, 80.4% families said that a reason was that the doctor did not know how to treat or provide care.

State/community/family participants provided the following information on medical home at CSHCN

Needs Assessment community meetings throughout the state, 2004:

- Strengths:
  - AAP-Hawaii Chapter has been a champion of several initiatives relative to CYSHCN (Genetics, Metabolic Screening, School Health, etc).
  - Community pediatricians committed to serving CYSHCN are willing to find ways to strengthen the medical home (which may include continued education, participation in service planning meetings, home visitation, etc.).
- Needs:
  - Increased coordination/collaboration between primary care and other providers, community agencies, and programs (emergency services, subspecialists, DOE, etc.).
  - Increased access to Medical Homes.
  - Expand the Medical Home concept to Family and General Practitioners.
  - Increased access to pediatric subspecialists on the neighbor islands.
- Opportunities:
  - Expand residency programs to require training on the Medical Home.
  - Provide "learning opportunities" for primary care providers to understand the roles of the other members of a health care team.
  - Distribute a resource guide for physicians/staff – by island for whole state.
- Challenges:
  - Many established community pediatricians have not made time or expressed an interest in



- participating in Medical Home building opportunities.
- Geographic pockets of our state do not have access to pediatricians.
- There are no vehicles to obtain reimbursement for physicians to participate in service planning activities (Individual Family Support Plan, Individual Education Plan, etc.).

### **CSHCN Core Outcome #3: Adequate Health Insurance**

Hawaii data on health insurance from the National Survey of CSHCN showed:

- 70% CSHCN have adequate private and/or public insurance to pay for needed services. (CSHCN core outcome measure)
- 97.7% CSHCN have health insurance coverage.
- 94% CYSHCN had no gaps in coverage during previous year.
- 11% CYSHCN had insurance that never or only sometimes met their needs.
- 22% CYSHCN had costs (not covered by insurance) that were not reasonable.
- 10% CYSHCN had insurance that never or only sometimes permitted child to see needed providers.

Hawaii data on health insurance from the National Survey of Children's Health showed:

- 93.2% CSHCN had health coverage, including health insurance, prepaid plans such as HMO's, or government programs such as Medicaid. This rate was not significantly different from the 95.1% children without special health care needs who had insurance coverage.
- 12.0% CSHCN were covered by health insurance for only a portion of the past 12 months.
- 87.8% CSHCN had insurance that helped to pay for routine dental care including cleanings, x-rays and examinations.
- Of CSHCN who did not receive all needed medical care during the past 12 months, reasons included: 71.6% - cost too much; 67.4% - no insurance; 48.2% - health plan problem; 48.2% - can't find doctor who accepts child's insurance.
- Of CSHCN who did not receive all needed routine preventive dental care during the past 12 months, reasons included: 44.3% - cost too much; 27.9% - no insurance; 9.0% - can't find dentist who accepts child's insurance; 8.1% - health plan problem.
- Of CSHCN who did not receive all needed prescription medication during the past 12 months, reasons included: 19.6% - cost too much; 19.6% - no insurance.

State/community/family participants provided the following information on health insurance at CSHCN Needs Assessment community meetings throughout the state, 2004:

- Strengths:
  - State Medicaid program provides the most comprehensive coverage for CYSHCN. Hawaii's State Children's Health Insurance Program (SCHIP) is a Medicaid expansion providing comprehensive benefits for children up to 200% Federal Poverty Level.
  - State has had mandated employer-provided health insurance for employees who work more than 19 hours a week for 3 consecutive weeks since 1975 under the Prepaid Health Care Act.
- Needs:
  - There needs to be a baseline of care established for CYSHCN prior to the conversion of our state Medicaid program from fee for service to managed care.
  - State programs and services funded through Medicaid, Medicaid Home and Community Based Waiver Programs, and EPSDT need better coordination and collaboration.

- Families need training opportunities to learn about insurance benefits or Medicaid system.
- Commercial insurance needs to provide coverage for transportation for parents as well as CYSHCN to access services on Oahu, that are not provided in their home communities on the neighbor islands.
- Opportunities:
  - Families have an opportunity to participate in the re-design of Medicaid in Hawaii, through the State Medicaid Managed Care Advisory Council.
  - Establish a virtual One Stop Center to help families find services and resources.
  - Provide “learning opportunities for families” to learn about their insurance and how to navigate the system.
- Challenges:
  - Commercial insurance companies and health plans in our state have no systematic way to identify CYSHCN, let alone their service and claims history as a group.
  - The state Medicaid program is converting to an entirely managed care model. There are concerns about an adverse impact on health care access for CYSHCN.
  - Some employers restrict the hours of employment for their employees so they do not have to comply with the Prepaid Health Care Act. Some parents have multiple part-time jobs so they can receive “full time” salary, but still lack the health care benefit.

#### **CSHCN Core Outcome #4: Early and Continuous Screening**

State/community/family participants provided the following information on screening at CSHCN Needs Assessment community meetings throughout the state, 2004:

- Strengths:
  - Programs and agencies serving CYSHCN are using similar standardized screening tools to validate development, identify delays, and customize curriculum to meet the needs of their children.
  - Specific best practices are emerging where there is cross-training on screening tools.
  - Families are resilient and resourceful and may initiate screening with the medical home, to address a perceived delay or developmental concerns.
- Needs:
  - School screening for vision, hearing, scoliosis, and height/weight is no longer done.
  - The referral system is extremely weak, once a child has been screened and is in need of further evaluation; primary care providers are not consistently making referrals.
  - Need more screening tools in native languages.
- Opportunities:
  - Because of the heightened awareness currently around screening, provide opportunities for interagency collaboration with the Medical Home to refine the screening and referral processes.
  - Provide opportunities to families to learn about periodic screening and its importance.
  - Provide mentors in the community to assist primary care providers.
- Challenges:
  - Because of various reasons for conducting screening within the community, the adoption of a “statewide” tool may be restrictive to certain provider types.
  - Some physicians view screening as time intensive and laborious and that insurance companies bundle screening into the “well baby visit”, therefore they are unable to get reimbursed for the “extra time” spent on the screening.
  - Because basic vision, hearing, height/weight, dental and scoliosis screens are no longer provided in schools, there are concerns about the “gap group” of children who do not have primary care and once in the school system may not have access to regular screening.

## Newborn Metabolic Screening

In July 1997, the number of disorders screened increased from two disorders (phenylketonuria, congenital hypothyroidism) to seven disorders (with the addition of biotinidase deficiency, congenital adrenal hyperplasia, galactosemia, hemoglobinopathies, and maple syrup urine disease). Table 4-14 shows the incidence of these disorders in Hawaii (with U.S. comparison).

<b>Table 4-14. Incidence of Disorders Identified Through Newborn Metabolic Screening, Hawaii, July 1997 - May 2005</b>			
<b>Disorder</b>	<b>Hawaii</b>		<b>U.S. Incidence</b>
	<b># Cases</b>	<b>Incidence</b>	
Biotinidase deficiency	2 profound 2 partial	1/34,783	1/70,000
Congenital adrenal hyperplasia	3 salt-wasters 3 virilized	1/23,189	1/15,000
Congenital hypothyroidism	53 primary 2 hypopituitary 1 compensated 1 undetermined 17 transient	1/2,625	1/4,000
Galactosemia	0 classic 9 Duarte variants 1 Los Angeles Duarte	0/139,131	1/60,000
Hemoglobinopathies	2 sickle cell (SS) disease 3 sickle C (SC) disease 1 C disease (CC) 1 F only 8 probable Hemoglobin E disease 131 possible Hemoglobin H disease 1 Hemoglobin Lepore 1 New York variant 605 S trait 401 E trait 149 C trait 26 D or G trait 3,050 alpha thalassemia (Bart's) trait	1/27,826	1/15,000 general population
Maple syrup urine disease	4 classic 1 intermediate	1/27,826	1/250,000
Phenylketonuria (PKU)	2 classic 1 hyperphenylalaninemia	1/46,377	1/18,000
Source: Hawaii State Department of Health, Newborn Metabolic Screening Program, 2005.			

In September 2003, the newborn screening panel expanded from 7 to 31 disorders, with the addition of 24 disorders (amino acid, urea cycle, organic acid, and fatty acid disorders) screened using tandem mass spectrometry. Up to May 2005, one case each of medium-chain acyl-CoA dehydrogenase deficiency (MCADD), holocarboxylase synthetase deficiency, and carnitine palmitoyl transferase I deficiency (CPT I) were diagnosed.

In 2004, 99.7% of eligible newborns received metabolic screening. Of infants confirmed with metabolic disorders, 100% (12/12) infants received appropriate follow-up. All confirmed cases are under medical supervision and none have been lost to follow-up. Quality assurance data regarding timing of specimen collection and transit shows generally acceptable rates for specimen collection >7 days (0.57%); specimen over 5 days in transit (2.26%, partially due to severe weather and holidays); turnaround time (average 3.58

days, maximum 6.53 days); specimens <6 days (98.83%); and inadequate specimens <24 hours (0.99%).

The following are needs regarding newborn metabolic screening:

- A medical community decision is needed on whether newborn screening should include cystic fibrosis. A 2005 report “Newborn Screening: Toward a Uniform Screening Panel and System” recommended a national core panel of disorders for screening (American College of Medical Genetics report, commissioned by the MCH Bureau, [www.mchb.hrsa.gov/screening/summary.htm](http://www.mchb.hrsa.gov/screening/summary.htm)). Cystic fibrosis is the only disorder in the core panel that is not currently in Hawaii’s newborn screening panel.
- Children with metabolic disorders must have access to appropriate genetic/metabolic services. Issues include sufficient funding for genetic/metabolic services, adequate insurance reimbursement, need for additional nutritionists with metabolic experience, and health care organization referrals.
- Expansion of the Hemoglobinopathy Clinic is needed for sickle cell disease and trait follow-up/genetic counseling.
- The Genetics Program with the Newborn Metabolic Screening Program has used focus groups to develop a brochure and a large poster on newborn metabolic screening. A study is needed to determine whether the poster or brochure is more effective in the obstetricians’ office waiting room or exam room.

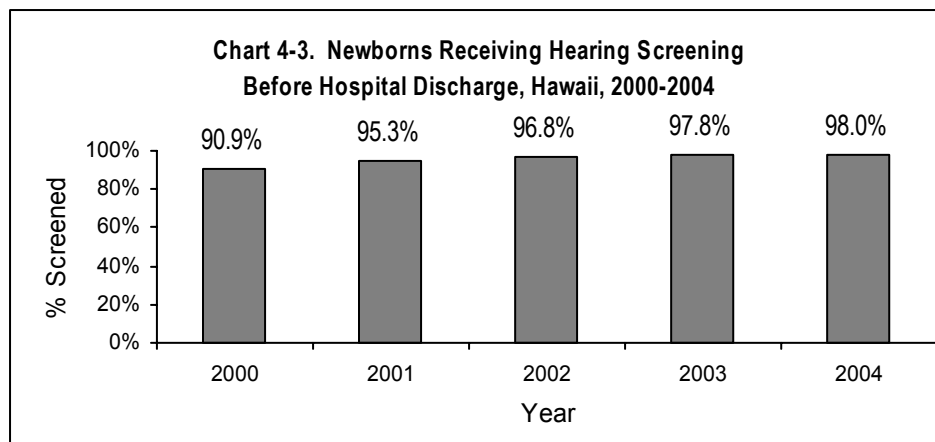
Source: Hawaii State Department of Health, Newborn Metabolic Screening Program, 2005.

### Newborn Hearing Screening

The Newborn Hearing Screening Program (NHSP) began in 1990 through a law that mandated that the Department of Health develop methodology to establish a statewide program for screening of infants and children age 0-3 with hearing loss. Amendment of the law in 2001 mandated screening of all newborns for hearing loss and reporting screening results to the DOH.

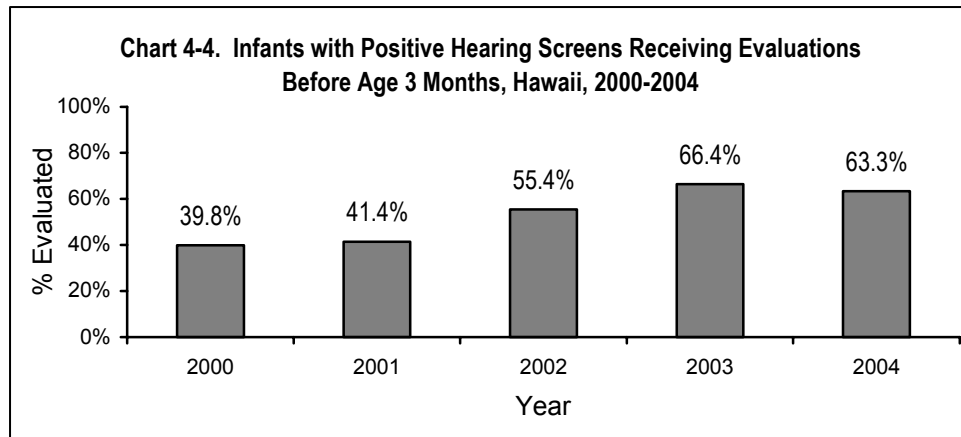
Screening began in 2 hospitals in 1992, was provided in all birthing facilities by 1999 and is now part of standard newborn care in Hawaii. Each birthing facility has a newborn hearing screening program.

Data on Hawaii newborns receiving hearing screening before hospital discharge, 2000-2004 (Chart 4-3) show a 2004 rate of 98.0%. This is close to meeting the national standard that all newborns will be screened for hearing loss before 1 month of age, preferably before hospital discharge.



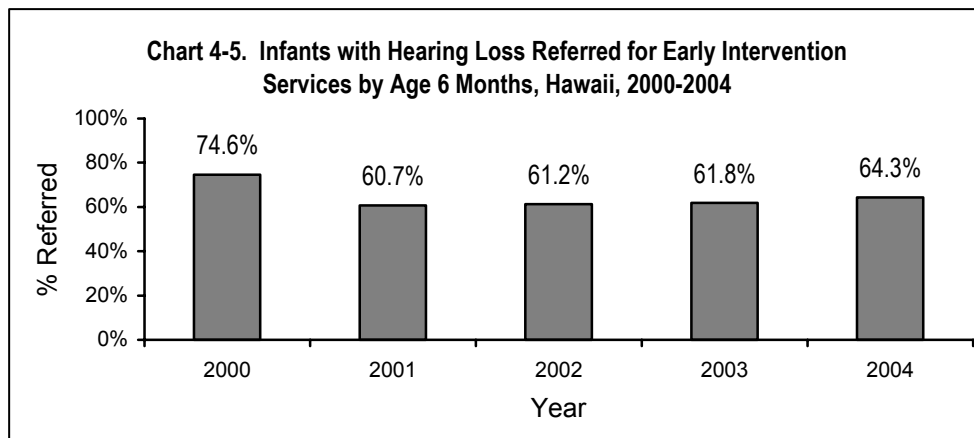
Source: Hawaii State Department of Health, Newborn Hearing Screening Program, 6/20/05. Denominator is the number of births, excluding deaths <24 hours.

Data on Hawaii infants with positive screens receiving evaluation before age 3 months, 2000-2004 (Chart 4-4) show a 2004 rate of 63.3%. This indicates a need for improvement to meet the national standard that all infants who screen positive will have a diagnostic audiologic evaluation before 3 months of age.



Source: Hawaii State Department of Health, Newborn Hearing Screening Program, 6/20/05. Denominator is the number of infants referred for diagnostic audiologic evaluation who did not pass the newborn screen.

Data on Hawaii infants with permanent hearing loss after positive screens who were referred for early intervention (EI) services before age 6 months, 2000-2004 (Chart 4-5) show a 2004 rate of 64.3%. This indicates a need for improvement to meet the national standard that all infants [with positive screens] identified with a hearing loss will begin receiving appropriate early intervention services before age 6 months.



Source: Hawaii State Department of Health, Newborn Hearing Screening Program, 6/20/05. Denominator is the number of infants with permanent hearing loss who did not pass the newborn screen.

Of 18,141 births in 2003, there were 54 (0.3%) children who were identified with a permanent childhood hearing loss through newborn hearing screening. Table 4-15 shows the types and severity of hearing loss.

<b>Table 4-15. Type and Severity of Hearing Loss for Children with Permanent Congenital Hearing Loss, Hawaii, 2003</b>						
Type of Hearing Loss	Children with Permanent Congenital Hearing Loss					
	Total		Mild	Moderate	Severe	Profound
	#	%	#	#	#	#
<b>Unilateral</b>	<b>23</b>	<b>43%</b>				
Sensorineural	9	17%	5	2	1	1
Conductive	12	22%	-	12	-	-
Mixed	2	4%	-	2	-	0
<b>Bilateral</b>	<b>31</b>	<b>57%</b>				
Sensorineural	23	43%	9	4	8	2
Conductive	2	4%	-	2	-	-
Mixed	6	11%	-	2	4	-
<b>Total</b>	<b>54</b>	<b>100%</b>	<b>14</b>	<b>24</b>	<b>13</b>	<b>3</b>
Source: Hawaii State Department of Health, Newborn Hearing Screening Program, "Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DPShWA) Data Reporting Form – Reporting Year 2003".						

The following are needs regarding newborn hearing screening:

- Screening by age 1 month:
  - Hospitals: ABR screening equipment is needed for rural hospitals with a small number of births to permit two-technology screening. Two-technology screening will help hospitals reduce the number of babies falsely identified on inpatient screens because it will give hospitals two different ways to find out if babies can hear. When false positive results are decreased, fewer babies require outpatient rescreening. When fewer babies require outpatient rescreening, fewer babies are at risk of not completing outpatient follow-up. Handheld screening ABR equipment that can store results for a few children at a time would be appropriate in hospitals that have less than 600 or so births per year. Hospitals with higher annual birth rates would likely need PC based screening ABR equipment that has more data capacity. In addition, screening ABR equipment will function as backup equipment in hospitals that do not have backup equipment, in order to reduce the number of infants who miss screening due to breakdown of OAE screening equipment.
  - Homebirths: Outreach to educate midwives on newborn hearing screening is needed to increase screening rates for homebirths.
  - Education: Comprehensive outreach to provide information on the importance of screening and follow-up to primary care providers, public health nurses, midwives, and other community providers statewide, would increase compliance with EHDl timelines and protocols. This may help health care providers encourage and clearly communicate to families about the importance of obtaining the re-screen or diagnostic audiologic evaluation.
  - Data and tracking system: The State NHSP needs to obtain individual child record data from all hospitals in order to maintain a complete database for quality assurance and monitoring that all infants are screened for hearing.
  - Infrastructure: Completion of the process to establish administrative rules is needed to permit the Department of Health to refine statewide standards and guidelines for conducting and reporting child specific results of newborn hearing screening, evaluation and intervention for all infants. The State NHSP and Early Intervention Section do not have an audiologist on staff to provide audiologic consultation/support for NHSP and early intervention care coordinators; review audiologic reports to confirm hearing loss and recommend referral for early intervention services; quality assurance; review policies and procedures; and review informational materials. NHSP therefore needs to contract with an audiologist for this consultation.

- Diagnostic audiologic evaluation by age 3 months:
  - Education: The newborn hearing screening and intervention manual for primary care providers needs to be completed. Protocols for services from newborn hearing screening to early intervention should be reviewed for consistency with the manual.
  - Audiology services: Families in rural areas need improved access to diagnostic audiological evaluations. Difficulties include lack of or limited availability of diagnostic equipment and audiological services on several Neighbor Islands. Infant audiological assessment guidelines need to be reviewed for consistency with the Provider manual and current best practice.
  - Data and tracking system: The data collection process needs to be improved so that the state NHSP consistently receives information about audiologic evaluations and diagnosis of permanent hearing loss after infants are referred for evaluation. Part of the difficulty relates to Health Insurance Portability and Accountability Act (HIPAA) and Family Educational Rights and Privacy Act (FERPA) issues related to early intervention services sharing data with State NHSP. Need to streamline the data analysis process for identifying infants who passed the newborn hearing screen but were later referred for evaluation. Currently this is possible only by looking at individual records.
- Infants with hearing loss receiving appropriate intervention services by age 6 months:
  - Education: Materials, brochures and resource guides are needed in several languages for use with families, physicians and service providers across the state. Additional in-service training opportunities are needed on each island to increase skills and knowledge of physicians, service providers, families, and early intervention care coordinators.
  - Family support: Additional family-to-family support opportunities are needed on all islands. Additional materials are needed to increase inter-island access to lending library materials.
  - Data and tracking system: The data collection process needs to be improved so that the state NHSP consistently receives information about EI enrollment after infants with hearing loss are referred for EI services. Part of the difficulty relates to Health Insurance Portability and Accountability Act (HIPAA) and Family Educational Rights and Privacy Act (FERPA) issues related to early intervention services sharing data with State NHSP. The data analysis process needs to be streamlined in order to identify infants who passed the newborn hearing screen but were later identified with hearing loss. Currently this is possible only by looking at individual records.

Source: Hawaii State Department of Health, Newborn Hearing Screening Program, 2005.

## **Developmental Screening for Young Children**

Hawaii data on developmental/behavioral screening from the National Survey of Children's Health showed:

- Of children age 0-5 years that have seen doctors during the past 12 months, 58.8% CSHCN's doctors or other health care professionals asked if family had concerns about child's learning, development, or behavior.
- Of children age 0-5 years with concerns who have seen doctors during the past 12 months, 51.7% CSHCN's doctors or other health care professionals gave family specific information to address family's concerns about child's learning, development, or behavior.

A survey of physicians was conducted by Healthy Child Care Hawaii (HCCH) in 2001, in part to obtain information on developmental, hearing, and vision screening of young children. The survey was mailed to 648 physicians who were Vaccines for Children providers, American Academy of Pediatrics- Hawaii Chapter members, or Hawaii Medical Association members who had a combined Internal Medicine/Pediatrics specialty. Regarding developmental screening, of 144 providers of primary care for children age 3-4 years:

- 77% screened most (75-100%) of their children age 3-4 years for development.
- 8% screened only a small proportion (0-25%) of their children age 3-4 years for development.

- 71% screened children using standardized or objective tests.
- Barriers to development screening included: difficulty getting child to test (32%), lack of staff time (27%), reimbursement (20%), lack of staff trained to screen (16%), and no screening tool in office (9%).
- 38% are interested in training in developmental screening for their staff.

Source: Healthy Child Care Hawaii, "A Survey of Physicians on Child Care Health Consultation and Screening of Young Children - May 2001".

- Data from the Preschool Developmental Screening Program (PDSP) indicate the importance of screening and follow-up for preschool-aged children with developmental/behavioral concerns, and PDSP's essential role in the system of follow-up for children with such concerns. During FY2005, PDSP received 876 referrals from physicians, families, H-KISS (early intervention central information and referral line), community agencies, and other sources. As a result of screening/evaluation, 189 (22%) children required speech evaluations, 32 (4%) needed psychological evaluations, and 168 (19%) were referred to the Department of Education special education preschool. (Source: Hawaii State Department of Health, Preschool Developmental Screening Program, 2005)

### **Vision Screening for Young Children**

The HCCH survey described above showed that for vision screening, of 144 providers of primary care for children age 3-4 years:

- 67% screened most (75-100%) of their children age 3-4 years for vision.
- 8% screened only a small proportion (0-25%) of their children age 3-4 years for vision.
- 73% screened children using standardized or objective tests.
- Barriers to vision screening included: difficulty getting child to test (61%), lack of staff time (18%), reimbursement (21%), lack of staff trained to screen (11%), and no screening tool or equipment in office (10%).
- 32% are interested in training in vision screening for their staff.

Source: Healthy Child Care Hawaii, "A Survey of Physicians on Child Care Health Consultation and Screening of Young Children - May 2001".

### **Hearing Screening for Children**

The HCCH survey described above showed that for hearing screening, of 144 providers of primary care for children age 3-4 years:

- 66% screened most (75-100%) of their children age 3-4 years for hearing.
- 9% screened only a small proportion (0-25%) of their children age 3-4 years for hearing.
- 67% screened children using standardized or objective tests.
- Barriers to hearing screening included: difficulty getting child to test (60%), lack of staff time (21%), reimbursement (21%), lack of staff trained to screen (11%), and no screening tool or equipment in office (11%).
- 33% are interested in training in hearing screening for their staff.

Source: Healthy Child Care Hawaii, "A Survey of Physicians on Child Care Health Consultation and Screening of Young Children - May 2001".



To determine the extent to which hearing loss was identified in school-age children, the Department of Health/Children with Special Health Needs Program conducted a hearing and vision screening needs assessment study in elementary and middle schools (grades preschool, K, 1, 2, 5, 7) in two school districts on Oahu from January to June 2000. The study was a follow-up to the elimination of the Department of Health/Hearing and Vision Program in 1995 as a result of budget restrictions and the view that this screening was the responsibility of primary care providers. The study showed that of 951 children screened for hearing, 52 (5.5%) children failed screening and were referred for further evaluation, and that of 1,250 children screened for vision, 45 (3.6%) children failed screening and were referred for further evaluation.

Source: Hawaii State Department of Health, Children with Special Health Needs Program, 2000.

### CSHCN Core Outcome #5: Community-Based Service Systems are Easy to Use

Hawaii data on systems from the National Survey of CSHCN showed:

- 69% CSHCN/ families report that community-based service systems are organized so they can use them easily. (CSHCN core outcome measure)

Hawaii data from the National Survey of Children's Health on access to health care are shown in Table 4-16.

Table 4-16. Access to Health Care Services, Hawaii, 2003	
	% CSHCN
<b>Medical Care</b>	
CSHCN age 0-17 years who did not receive all needed medical care, during past 12 months	2.6
For CSHCN not receiving needed medical care, reason included:	
Can't find doctor who accepts child's insurance	48.2
Not available in area/transport problems	48.2
Did not know where to go for treatment	48.2
Doctor did not know how to treat or provide care	13.6
<b>Dental Care</b>	
CSHCN age 0-17 years who did not receive all needed routine preventive dental care, during past 12 months	4.6
For CSHCN not receiving needed dental care, reasons included:	
Not convenient times/ could not get appointment	30.1
Can't find dentist who accepts child's insurance	9.0
Not available in area/transport problems	8.1
<b>Prescription Medications</b>	
CSHCN age 0-17 years who did not receive all needed prescription medication, during past 12 months	0.6
For CSHCN not receiving needed prescription medication, reasons included:	
Doctor did not know how to treat or provide care	80.4
Source: Hawaii data from the National Survey of Children's Health, 2003. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2005.	

State/community/family participants provided the following information on systems at CSHCN Needs Assessment community meetings throughout the state, 2004:

- Strengths:
  - There is strong collaboration and coordination between the primary service agencies within Early Intervention (Early Intervention Section, Public Health Nursing, Healthy Start and numerous contracted providers).
  - There are very strong community based STEPS teams that focus on supporting transitioning children from Early Intervention (Part C services) to Special Education (Part B services).
- Needs:
  - There is an ongoing need for awareness and education amongst professionals and parents as to the resources and services in the communities and how to access them.
  - Families have difficulty finding an “entry point” once they are in the system, and need a mechanism to access services regardless of the entry point.
  - There is inconsistency in the knowledge of community services and resources amongst providers and agency personnel, limiting access as families may not know these services exist.
  - Access to pediatric subspecialty care continues to be a problem on the neighbor islands.
- Opportunities:
  - Strengthen and structure the referral processes between agencies and programs to facilitate coordinated services and minimize fragmented services.
  - Provide learning opportunities for families, providers, agencies, and others working with CYSHCN on the resources and services available to children.
  - Look at the concept of a virtual One Stop Center and expand the information database with the state Real Choices® System and 211.
  - Utilize telemedicine to support the needs of CYSHCN on the neighbor islands.
- Challenges:
  - With significant progress in identifying CYSHCN, provider capacity has increased to meet the needs of the children. However, many new providers and agencies servicing our community are unaware of community resources. Many of these providers have come from other service delivery models that are not based upon Family Centered Care, and lack fundamental competencies to provide coordination and family support.
  - Medical Case Management is provided to specific groups of CYSHCN who meet specific eligibility criteria. While we have ensured that our most vulnerable CYSHCN are provided these services, families who do not meet income, diagnosis, or level of care requirements are tasked to provide their own case management. Families currently do not have tools, protocols, standards, or training to do this kind of case management.

To study factors contributing to difficulty using community-based services by families of CSHCN in Hawaii, data from the 2001 National Survey of CSHCN were analyzed. Logistic regression analysis showed that the odds of reporting difficulties in using community-based services were almost 5 times higher for families who did not partner in decision-making, 2.9 times higher for families who did not receive family-centered coordinated care, and 2.7 times higher for families who did not have adequate health insurance than for families who were satisfied with the care received. It was concluded that families who reported difficulties in using community-based services have children who need extensive and varied services. Lack of involvement in decision-making, lack of coordinated care in a medical home, and insufficient health insurance were the main obstacles to their ability to use community-based services easily. The article “Factors Associated with Ease of Using Community-Based Systems of Care for CSHCN in Hawaii”, by G. Baruffi, C. Prince, L. Miyashiro, and P. Heu, has been accepted for publication in the Maternal and Child Health Journal.

## CSHCN Core Outcome #6: Transition to Adult Life

Hawaii data on health insurance from the National Survey of CSHCN showed:

- 5% youth with special health care needs (YSHCN) have received the services necessary to make transitions to all aspects of adult life. (*CSHCN core outcome measure*)
- 60% YSHCN have doctors who talked about changing needs as youth becomes an adult.
- 54% YSHCN have a plan for addressing changing needs.
- 36% YSHCN have doctors who discussed the shift to an adult health care provider.
- 29% YSHCN have received vocational or career training.

Hawaii data for children 6-17 years from the National Survey of Children's Health, related to transition to adult life, including work and independence, are shown in Table 4-17. Data show that CSHCN have significantly higher proportions of school-related problems, compared to children without special health care needs. Having school problems could impact the eventual transition to adult employment.

<b>Table 4-17. Comparison of Children With and Without Special Health Needs regarding School, Community, and Work Activities, Hawaii, 2003</b>			
Children Age 6-17 Years	% CSHCN	% Children Without Special Health Care Needs	
<b>School</b>			
During the past 12 months, child/youth missed 11 or more days of school due to illness or injury, during the past 12 months	8.2	1.8	★
For children enrolled in school, child/youth's school contacted family two or more times about problems child was having with school, during the past 12 months	36.0	12.3	★
Starting with kindergarten, child/youth has repeated grades	14.3	5.9	★
<b>School/Community Activities</b>			
Child/youth was on a sports team or took sports lessons after school or on weekends, during the past 12 months	54.2	64.3	
Child/youth participated in clubs or organizations (such as Scouts, religious group, Boys/Girls club) after school or on weekends, during the past 12 months	53.9	48.0	
Child/youth participated in other organized events or activities, during the past 12 months	7.4	6.2	
<b>Youth Service Or Work</b>			
Youth age 12 years and older has been involved in community service or volunteer work at school, church, or in the community, during the past 12 months	64.5	67.8	
Youth age 12 years and older has worked for pay	15.7	14.8	
★ Statistically significant difference between CSHCN and Not CSHCN rates at the 95% confidence interval. Source: Hawaii data from the National Survey of Children's Health, 2003. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2005.			

State/community/family participants provided the following information on transition at CSHCN Needs Assessment community meetings throughout the state, 2004:

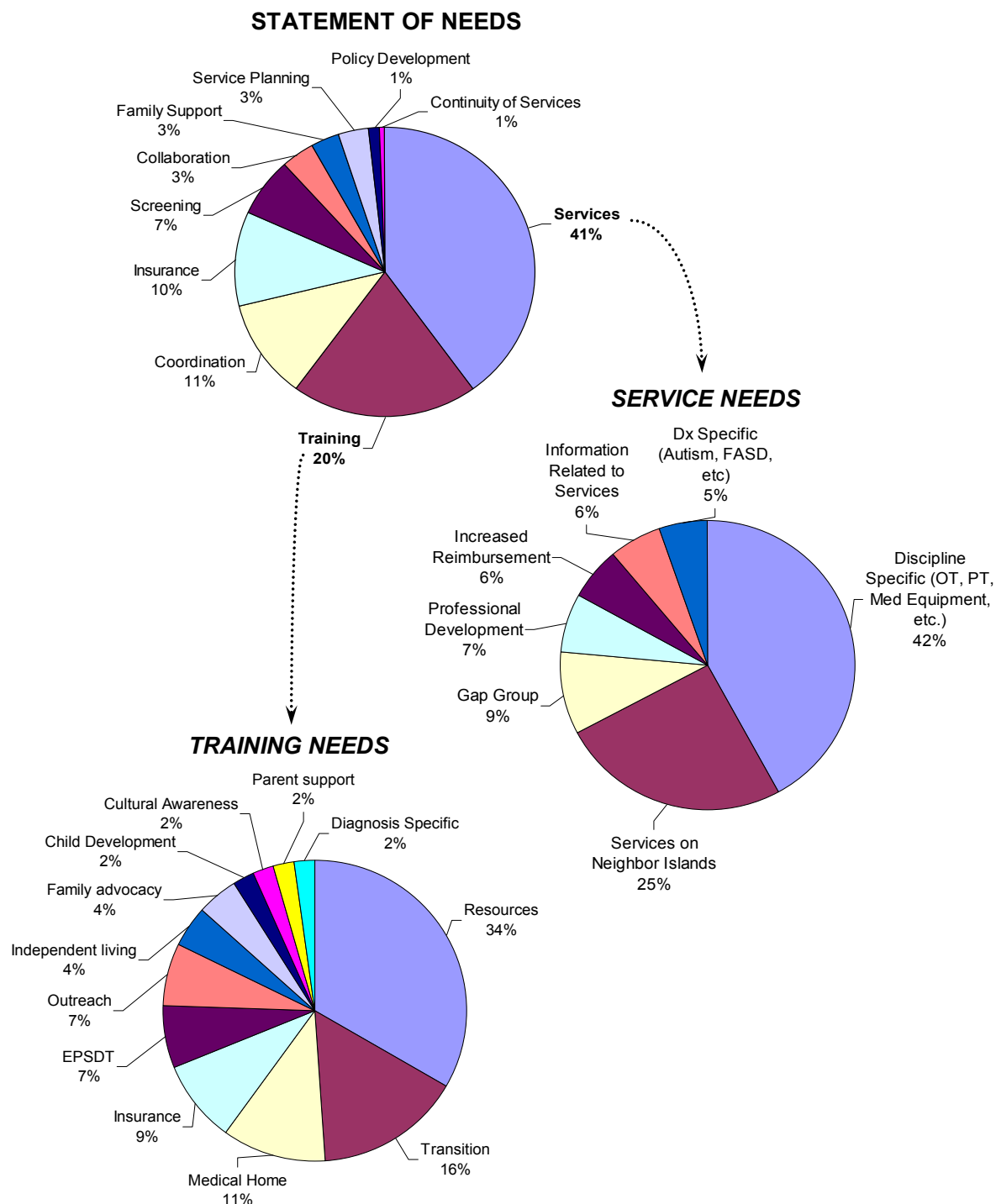
- **Strengths:**
  - There is a lot of momentum focusing on the area of transition for youth with developmental

- disabilities within the state, primarily focused on consumer directed services.
  - Hawaii received a grant from the Administration on Developmental Disabilities Family Support 360 One Stop Center, which will focus on “virtual” one stops for transitioning youth and families.
  - DOH/Children with Special Needs Program supports children/youth from birth through 21.
- Needs:
  - Better coordination is needed between Department of Education, Vocational Rehabilitation, and the Developmental Disabilities Division. Statewide policies outlining referral and coordinated services planning need to be implemented.
  - Many pediatricians follow YSHCN through adulthood because they cannot find an appropriate adult medicine physician.
- Opportunities:
  - Develop a cadre of physicians to mentor adult medicine physicians to take YSHCN into their practices at adulthood.
  - Develop statewide best practices/tools to facilitate transition of primary care for YSHCN.
  - Support the Family Support 360 One Stop Center.
- Challenges:
  - The state of Hawaii is aging, creating a large demand on adult medicine providers. There is no financial incentive for adult primary care physicians to take YSHCN into their practices, as their practices are already filled to capacity.
  - Programs for young adults are based upon funder priorities and may be restrictive. This creates silos which are difficult to transcend, let alone understand. It also created a system whereby YSHCN have to pursue opportunities in a sequential nature to receive the appropriate “denial”, in order to then move to the next program.
  - Only 4 agencies within the state provide supportive employment through the Vocational Rehabilitation Division. The most experienced agency, Winners at Work, provides services on Oahu. There are very few opportunities on the neighbor islands.

### **Summary of Needs Identified at the CSHCN Needs Assessment Community Meetings**

The CSHCN Needs Assessment community meetings in 2004 involved over 200 parents and state/community partners, on the islands of Oahu, Kauai, Maui, and Hawaii. Responses were recorded and thematically labeled and aggregated (Chart 4-6). By stated needs, services are the largest need (41%), followed by training (20%), coordination (11%), and insurance (10%). Further analysis of service needs showed that discipline specific (OT, PT, medical equipment, etc.) were the most needed (42%), followed by services on the Neighbor Islands (25%), and gap group (9%). Further analysis of training needs showed that training on resources was the greatest need (34%), followed by transition (18%), medical home (11%), and insurance (9%).

**Chart 4-6. Summary of Needs Identified at the CSHCN Needs Assessment Community Meetings, Hawaii, 2004**



## **DIRECT HEALTH CARE AND ENABLING SERVICES**

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### **Financial Access to Health Care and Health-Related Services**

#### **Health Insurance**

- In 1974, the Prepaid Health Act mandated that all employers provide health insurance to employees working more than 19 hours a week. This has had a major impact on assuring that a large segment of Hawaii residents had health insurance coverage. However, being uninsured and underinsured are still concerns.

- Uninsured Rates

- Estimated uninsured rates range from 2.3 to 9.9%.

- The Hawaii uninsured rate from the Current Population Survey was 9.9%, based on a 3-year average from 2001 to 2003. (Source: U.S. Census Bureau, Current Population Survey, 2002 to 2004, Annual Social and Economic Supplements).

- The 2003 Hawaii Health Survey showed that 63,693 individuals (5.2% of the population) in Hawaii were uninsured. Uninsured rates were highest for Hawaiian/Part Hawaiian (7.0%), followed by Caucasian (6.4%), Filipino (3.9%), Chinese (3.5%), and Japanese (2.0%); the rate for the other/unknown group was 7.7%. Hawaii County had the highest percentage of uninsured residents (9.2%), followed by Maui County (8.1%), Kauai County (7.0%), and City & County of Honolulu (Oahu) (3.9%). Of the 8,388 children between age 0-17 years who were uninsured, 6,267 (2.6%) were children age 0-14 years, and 2,121 (4.3%) were youths age 15-17 years.

- Hawaii data from the National Survey of CSHCN showed an uninsured rate of 2.7% for CSHCN age 0-17 years.

- Hawaii data from the National Survey of Children's Health showed an uninsured rate of 5.5% for children age 0-17 years, with a rate of 7.1% for CSHCN and 5.2% for children without special health care needs.

#### Insurance Problems

Hawaii data from the National Survey of CSHCN show that families have problems with insurance:

- 11% CSHCN had insurance that never or only sometimes met their needs.
- 22% CSHCN had costs (not covered by insurance) that were not reasonable.
- 10% CSHCN had insurance that never or only sometimes permitted child to see needed providers.
- 13% CSHCN/families believe their child's health plan is not good for CSHCN.
- 12% CSHCN/families called/wrote to any of the child's health plans with a complaint or problem.
- 25% CSHCN/families, if they had a chance, would switch to a different health care plan.
- Hawaii data from the National Survey of CSHCN also indicate that an estimated 12% CSHCN are underinsured (based on health insurance not paying for a needed service, or inability of a family with health to afford out-of-pocket costs for services):
  - 3% CSHCN with insurance did not get or delayed needed care because of cost for services such as preventive care, specialty care, dental care, prescription medication, physical therapy, occupational therapy, speech therapy, mental health, substance abuse treatment/counseling, respite, genetic counseling.

- 9% families of CSHCN with insurance paid over \$500 in out-of-pocket costs for medical/health-related expenses in the past year, and had financial problems caused by their child's health conditions or needed additional income to cover their child's medical expenses.
- 
- Financial Difficulties for Families
- Hawaii data from the National Survey of CSHCN show some of the financial difficulties that families face in getting needed services:
  - 43% families of CSHCN paid \$1,000 or more out-of-pocket for medical care / health-related needs in the previous year.
  - 13% families of CSHCN had financial problems caused by their child's condition.
  - 14% families of CSHCN needed additional income to cover their child's medical expenses.
  - 29% CSHCN had family members whose employment was affected by the child's condition (for example, reduced work hours or stopped working).
- 
- Medicaid Changes
- The Medicaid QUEST managed care program currently covers adults with incomes at or below 100% of the federal poverty level (FPL) and uninsured children with family incomes at or below 200% FPL. In addition, a QUEST-Net program provides full Medicaid benefit for children with family incomes 200-300% FPL and a limited benefit package for adults with incomes at or below 300% FPL; to be eligible, individuals must be enrolled in QUEST or Medicaid fee-for-service when their income or assets rise above the QUEST or Medicaid FFS eligibility limits.
 

Hawaii is proposing changes to QUEST managed care program to include:

  - The Aged, Blind, and Disabled (ABD) population (with some exclusions) will be enrolled into managed care plans. This includes children who are in the Medically Fragile Community Care Program, and children/adults in Nursing Home Without Walls, and children/adults in the HIV Community Care Program (July 2007). For children/adults in the DD/MR waiver, primary and acute health care will be provided by managed care plans in July 2007, with long-term home and community-based and nursing facility services to begin January 2009.
  - The upper income limit (to be determined) for SCHIP will be raised.
  - A requirement for prior Medicaid enrollment to be eligible for QUEST-Net will be eliminated, so that children above the SCHIP eligibility level but at or below 300% FPL will be eligible for QUEST-Net.
  - All Medicaid-eligible children in the Child Welfare system will be eligible for coverage under a QUEST plan with enhanced benefits (multi-disciplinary assessment) that are now only provided for children in foster care.
  - A limited dental benefit for TANF and TANF-related adults will be added.

Early intervention services will continue to be provided through a carved-out, non-risk, capitated plan offered by DOH.

DHS is providing updates to state/community agencies and providers at QUEST Expanded Roundtables. DHS has established an Advisory Council regarding implementation; members include representatives of Family Voices, American Academy of Pediatrics, and the State Council on Developmental Disabilities.

## Cultural Acceptability of Health Care and Health-Related Services

The State of Hawaii is unique in its ethnic diversity. With over 1.2 million residents, there is no one ethnic group that comprises a majority. The population comprises White 24.3%, Black or African American 1.8%, American Indian/Alaska Native 0.3%, Asian 41.6% (including Japanese 16.7%, Filipino 14.1%, Chinese 4.7%, Korean 1.9%), Native Hawaiian/Other Pacific Islander 9.4%, other 3.9%; persons reporting 2 or more races 21.4%; and Hispanic/Latino origin 7.2%. (Source: US Census, 2000)

Foreign-born persons comprise 17.5% of the state's population. Language is sometimes a barrier. 26.6% of residents over 5 years of age reported speaking a language other than English at home, with 12.7% reported speaking English less than "very well". Languages spoken at home include Other Pacific Islands 7.9%, Tagalog 5.4%, Japanese 5.0%, Chinese 2.6%, Spanish and Spanish Creole 1.7%, Korean 1.6%. (Source: US Census, 2000)

- Approaches to cultural competency within the Department of Health and other state/community programs include: hiring ethnically/culturally-diverse staff with experience in working with people in various cultures; use of translators in communicating with non-English speaking persons; translation of written materials into other languages; providing information on how to obtain translators; having members of diverse ethnic backgrounds on advisory boards and committees; having individuals of various ethnic and cultural groups review and provide input to the appropriateness of programs, messages, and interventions; and education/training to develop cultural competence and awareness.

## Availability of Prevention and Primary Care

Hawaii data from the National Survey of CSHCN show:

- 98% CSHCN had a usual place to go for sick care. 88% CSHCN had a usual place for preventive care.
- 88% CSHCN had a personal doctor or nurse.
- Hawaii data from the National Survey of Children's Health (2003) indicate that a significantly higher proportion of CSHCN age 0-17 years receive preventive/medical care services, compared to that for children without special health care needs (Table 4-18).

<b>Table 4-18. Comparison of Children With and Without Special Health Needs regarding Preventive and Primary Care Services, Hawaii, 2003</b>			
	<b>% CSHCN</b>	<b>% Not CSHCN</b>	
Child has a personal doctor or nurse (health professional who knows child well and is familiar with child's health history, who can be a general doctor, pediatrician, specialist doctor, nurse practitioner, or physician assistant)	88.7	83.9	
Child visited his/her personal doctor or nurse for preventive care during the past 12 months	84.2	75.9	★
Child saw a doctor, nurse, or other health care professional for medical care during the past 12 months	92.5	83.6	★
★ Statistically significant difference between CSHCN and Not CSHCN rates at the 95% confidence interval. Source: Hawaii data from the National Survey of Children's Health, 2003. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2005.			



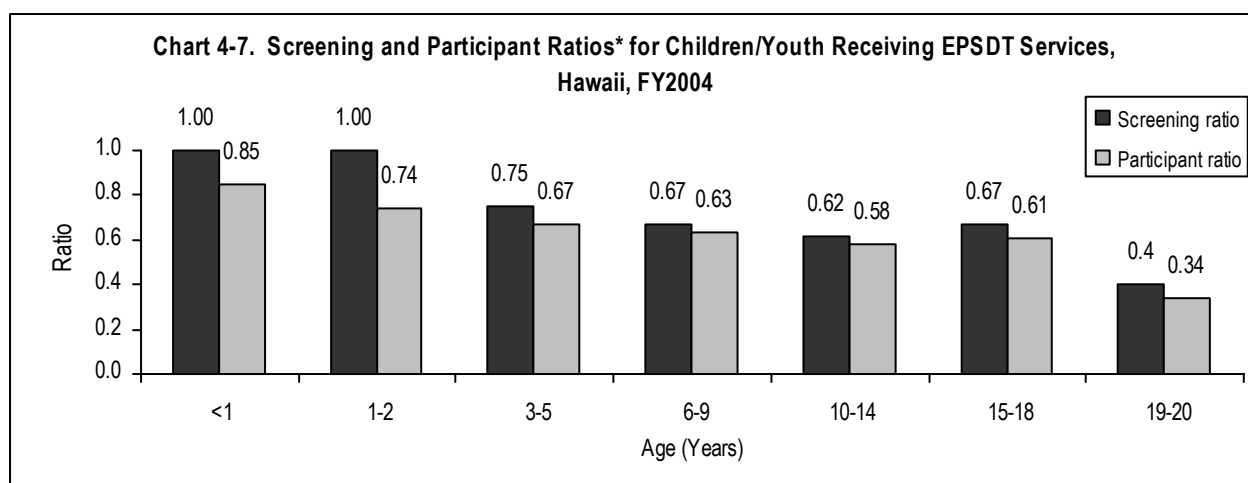
Primary care providers, including private physicians and community health centers, are available on all islands.

Community health centers (CHCs) in underserved areas are located on the islands of Oahu (5 centers), Kauai (2), Maui (2), Molokai (1), and Hawaii (5). Special populations served include those with limited financial resources, uninsured, Native Hawaiians, Pacific Islanders, and immigrants. Services are provided on a sliding fee basis.

Pediatric residents of the University of Hawaii/School of Medicine/Department of Pediatrics provide primary care at the Pediatric Outpatient Clinic at by Kapiolani Medical Center for Women and Children

In 2002, there were 3,201 licensed physicians in Hawaii, of whom 96% were in active practice and providing patient care. Of the 3,091 active physicians, 53.4% were primary car physicians (including general practitioners, pediatricians, obstetrician/gynecologists, family physicians, and internists). Data on the proportion of health care providers (licensed physicians, licensed dentists, licensed practical nurses, and advanced practice registered nurses) by county population show that Oahu had a disproportionate share of the health care workforce. The ratio of physicians per 1,000 population is the highest for the City & County of Honolulu (2.81), with lower ratios for Kauai (2.02), Maui (1.94), and Hawaii (1.94). (Source: Hawaii Department of Commerce and Consumer Affairs, Professional and Vocational Licensing Branch, Records, 1990-2003; reported in HMSA Foundation, "Health Trends in Hawaii – A Profile of the Health Care System, sixth edition, 2003", [www.healthtrends.org](http://www.healthtrends.org).)

Early Periodic Screening, Diagnosis, and Treatment (EPSDT) data from the Hawaii State Department of Human Services provides information on periodic screening services for Medicaid eligible children under age 21 years. Screening services include health/developmental history, physical examination, immunizations, laboratory tests, health education, vision, hearing, developmental, and dental services. Screening and participant ratios (Chart 4-7) for Hawaii for Fiscal Year 2004 show a decrease in screening services with increasing age.



\* Screening ratio = (total screens received)/(expected number of screenings), showing the extent to which EPSDT eligibles receive the number of initial and periodic screening services required by Hawaii's periodicity schedule, adjusted by the proportion of the year for which they are Medicaid eligible.

Source: Data from Hawaii State Department of Human Services, Med-QUEST Division, Form CMS-416 - Annual EPSDT Participation Report, Hawaii FY2003 and 2004. Information on screening ratios is from Centers for Medicare & Medicaid Services, [www.cms.hhs.gov/medicaid/epsdt/default.asp](http://www.cms.hhs.gov/medicaid/epsdt/default.asp).

Participant ratio = (total eligibles receiving at least one initial or periodic screen)/(total eligibles who should receive at least one initial or periodic screen), showing the extent to which EPSDT eligibles are receiving any initial and periodic screening services during the year.

Source: Data from Hawaii State Department of Human Services, Med-QUEST Division, Form CMS-416 - Annual EPSDT Participation Report, Hawaii FY2004. Information on participant ratios is from Centers for Medicare & Medicaid Services, [www.cms.hhs.gov/medicaid/epsdt/default.asp](http://www.cms.hhs.gov/medicaid/epsdt/default.asp).

Developmental, vision, and hearing screening by primary care providers is an area for improvement – see “CSHCN Core Outcome #4 – Early and Continuous Screening” in the section on “Population and Health Status”.

### **Availability of Specialty Care**

- The state of Hawaii is composed of seven populated islands located almost in the center of the Pacific Ocean. The majority of specialty care services are located on Oahu, with the greatest concentration in the capital city of Honolulu.

Access to community-based pediatric subspecialty care on Neighbor Islands and in Rural Oahu is a problem identified at CSHCN Needs Assessment meetings (2004) and Hawaii State Legislature (2005). Issues include:

- Specialists tend to practice in urban or suburban areas, primarily on Oahu, thereby creating a barrier to care for residents living in rural Oahu and on the neighbor islands. Difficulties for specialists located in rural areas may include inadequate patient volume to sustain a specialty care practice or to maintain professional competency; excessive and largely uncompensated on-call coverage; and insufficient opportunities for appropriate continuing education and professional collaboration/interaction.
  - Neighbor Island residents who need to travel to Oahu for specialty services may have financial difficulties, since health insurance plans may not include airfare, ground transportation, lodging, and meals as covered benefits. The airfare cost between a Neighbor Island and Oahu now ranges from \$180-300 per round-trip, a rise from \$100 per round-trip five years ago. The number of flights has decreased, and airline tickets now have more restrictions. Residents may incur lost wages due to the time it takes to travel inter-island. They may also incur the unreimbursed travel cost for the accompanying caregiver, companion, or parent.
  - Some Neighbor Island families have difficulty traveling to health services on their own island, due to factors such as long distances, winding roads, length of travel time, cost for gasoline, and lack of public transportation system.
  - There is a national shortage of physicians in some specialty fields, adding to the difficulty in recruiting physician specialists to Hawaii.
  - The limited number of practitioners who are willing to participate in Medicaid or QUEST or to serve the uninsured population may add to the difficulty of accessing specialist services.
  - Hawaii's designation as a federal health professional shortage area does not address access to specialty care.
- CSHNB provides or supports pediatric cardiology, neurology, endocrinology, genetics, and hematology/thalassemia clinics on Oahu and on three Neighbor Islands, with resources from the Children with Special Health Needs Program (CSHNP), Genetics Program, and Newborn Metabolic Screening Program. Clinics are provided or supported to improve access to care in areas where they are otherwise not available. CSHNP assists eligible families in getting services from providers who are willing to accept program fees or insurance payment without the co-payment from families; and assists eligible Neighbor Island families with airfare, ground transportation, and lodging as needed to access specialty services on Oahu. CSHNP also provides financial assistance for laboratory tests, procedures such as X-rays and EKG, prescription medications, and hearing aids and related services.

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Administered

through CSHNP, the Hawaii Lions Foundation Uninsured-Underinsured Fund for Hearing and Vision Services assists eligible DOE students in receiving needed vision and hearing testing and services. Services may include ophthalmology or otolaryngology evaluation, eyeglasses, and hearing aids.

- Honolulu Shriners Hospital for Children provides surgical and rehabilitative orthopedic care to children from Hawaii and the Pacific Basin under age 18 years with bone, muscle and joint disorders and disabilities, at no cost to families.
- Tertiary health care facilities are located on Oahu, with none on the Neighbor Islands. Kapiolani Medical Center for Women and Children, the only facility in the state specializing in pediatrics, has a 24-hour pediatric emergency room, pediatric intensive care, neonatal intensive care. Access of other tertiary care facilities on Oahu is limited to health maintenance organization members or to the military.

### **Linkages that Promote Provision of Services and Referrals between Primary Care, Specialized Secondary Care, and Highly Specialized Tertiary Care**

Hawaii data from the National Survey of CSHCN on care coordination show:

- 14% CSHCN/families needed professional care coordination. Of these, only 74% received care coordination.
- Of CSHCN/families receiving care coordination, 85% were somewhat or very satisfied with the help they received in coordinating care.
- Comparing with CSHCN who need prescription medicines and/or services, CSHCN with functional limitations have the greater need for care coordination:

	<i>% needing care coordination</i>
CSHCN who need ONLY prescription medicines	4%
CSHCN who need ONLY services	16%
CSHCN who need BOTH prescription medicines and services	16%
CSHCN with functional limitations	30%

- 76% CSHCN had no problems obtaining referrals when needed.

Hawaii data from the National Survey of Children's Health on assistance for children needed specialist care or special services are shown in Table 4-19.

<b>Table 4-19. Assistance to CSHCN Needing Specialist Care or Special Services, Hawaii, 2003</b>	
	<b>% CSHCN</b>
<b>Children Needing Specialist Care</b>	
Family had a moderate/big problem getting care from specialist doctor(s) when needed.	14.2
Child's personal doctor, nurse, or office staff helped family to get care from specialist doctor(s)	83.1
<b>Children Needing Special Services</b> ( such as physical therapy, wheelchairs, special education services, counseling)	
Family had a moderate/big problem getting special services, equipment, or other care when needed	16.0
Child's personal doctor or nurse helped family to get the special care or equipment that child needed	73.6
Source: Hawaii data from the National Survey of Children's Health, 2003. Analysis by Hawaii State Department of Health, Children with Special Health Needs Branch, 2004.	

Care coordinators who assist with referrals and linkages include CSHNP nurses and social workers, Early

Intervention social workers, public health nurses, developmental disabilities case managers, EPSDT care coordinators, medically fragile waiver care coordinators, hospital case managers, health plan care coordinators, and others. A general effort is made toward a family having only a single care coordinator. CSHCN/families are referred as needed to social services/programs such as housing, employment, child protection, child care, medical assistance, Temporary Assistance for Needy Families, etc.

- The tertiary pediatric hospital Kapiolani Medical Center for Women and Children (KMCWC) on Oahu maintains a specialized team to transport critically ill infants and children from Neighbor Islands and from other areas of Oahu to KMCWC, and from KMCWC to mainland hospitals for specialized care not available in Hawaii. The team includes neonatologists/pediatricians, nurses, and respiratory therapists.

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### **Relationship of Title V with Others in the State Who Address Inadequate, or Poorly Distributed, Health Care Resources**

- FHSD contracts for the provision of pediatric primary care services at community health centers; and supports the development of community health centers in underserved areas of Hawaii. FHSD works closely with the Primary Care Association.
- CSHNB contracts with private providers for the provision of pediatric cardiology, neurology, and endocrinology specialty on Neighbor Islands, and provides funding support for genetics and hematology/thalassemia clinics on Oahu. Genetics clinics on Neighbor Islands are planned. These services are otherwise not available.
- EIS contracts for early intervention services on Neighbor Islands with community agencies. Oahu early intervention staff (such as nutritionist, psychologists, vision specialist, hearing specialist, etc.) provide services on Neighbor Islands where these services are not otherwise available.
- Services on Neighbor Islands are also provided by other Oahu-based medical specialists, pediatric audiologists, and Honolulu Shriners Hospital for Children.
- A legislative resolution (SCR 195) recognized the need for a collaborative solution to inadequate and poorly distributed specialty services. The State Health Planning and Development Agency (SHPDA) was designated to identify and evaluate the barriers to community-based access to specialty care and to make recommendations to improve access to specialty care on the neighbor islands and in rural Oahu. SHPDA was requested to consult with the Department of Health, Department of Human Services, State Council on Developmental Disabilities, Insurance Commissioner; Hawaii Health Systems Corporation, representatives of health plans, University of Hawaii, John A. Burns School of Medicine, Office of Rural Health, Hawaii Primary Care Association, Healthcare Association of Hawaii, Hawaii Psychological Association, Hawaii Psychiatric Medical Association, Hawaii Disability Rights Center, other associations and stakeholder groups, and rural and neighbor island communities and health care providers.

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## POPULATION-BASED SERVICES

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- **Newborn Metabolic Screening**

- State role: The Newborn Metabolic Screening Program (NBMSp), in the Children with Special Health Needs Branch of the Family Health Services Division, DOH, has statewide responsibilities for assuring that all infants born in Hawaii are screening for 31 mandated disorders. These disorders are phenylketonuria, congenital hypothyroidism, congenital adrenal hyperplasia, galactosemia, sickle cell and other hemoglobinopathies, biotinidase deficiency, maple syrup urine disease, and 24 other amino acid, urea cycle, organic acids, and fatty acid disorders.
- NBMSp has oversight over the newborn metabolic screening system, including obtaining blood specimens at hospitals, specimen transport, central laboratory testing, physician notification, and tracking. NBMSp staff track all infants who are diagnosed with metabolic and other disorders, have abnormal and unsatisfactory screening results, transfer to another facility, or are not screened. For infants who confirmed with disorders, NBMSp identifies the medical home, links the medical home with the metabolic consultants, and follows-up with the medical home to ensure timely treatment.
- Monthly newborn metabolic screening practice profiles are sent to birthing facilities and submitters, in an effort to decrease errors in transit time, timing of specimen collection, specimen quality, and reporting of demographic information; birthing facilities use these screening practice profiles as a quality assurance tool. The screening practice profiles and updated information on newborn metabolic screening are also provided on the DOH website. NBMSp staff identifies infants who did not receive newborn screening, based on "Specimen Not Obtained" forms and Hospital Monthly Newborn Screening Reports from birthing facilities, and try to get these infants screened. NBMSp staff provides education to health care providers, midwives, public health nurses, childbirth educators, and the general public about expanded newborn metabolic screening.
- State's coordination with other agencies and organizations: The Newborn Metabolic Screening Advisory Committee consists of consumers and professionals (physicians, laboratory personnel, nurses from various birthing facilities, medical insurance plan representatives, parents, and other DOH representatives) from the private and public sectors. The committee's purposes are to provide support, guidance, and feedback to DOH about newborn screening; disseminate information about newborn screening to colleagues and the community; monitor accountability and quality of the newborn screening program; and discuss ideas and issues relevant to newborn screening.
- Geographic availability/distribution: Screening is available statewide at all birthing facilities. Screening is also available at outpatient laboratories through midwives.
- Funding mechanism: Newborn Metabolic Screening Special Fund provides funding for NBMSp staff, laboratory testing, follow-up testing, educational materials, continuing education, quality assurance, and other NBMSp expenses. NBMSp collects fees for specimen collection kits, which include filter paper, screening test, and any needed diagnostic testing. Payment from birthing facilities for specimen collection kits are deposited into the Newborn Metabolic Screening Special Fund. Birthing facilities obtain reimbursement for newborn metabolic screening from health insurance. NBMSp staff have provided information and education to

midwives, and have made screening kits available through midwives for families who are unable to afford the cost of screening.

- Legislative mandate: The State law is H.R.S. §321-291, Newborn Metabolic Screening. State administrative rules are H.A.R. Chapter 11-143, Testing of Newborn Infants for Metabolic and Other Disorders.
- Needs: See “Newborn Metabolic Screening” under “CSHCN Core Outcome #4: Early and Continuous Screening”, in the section “Population and Health Status”.

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- **Newborn Hearing Screening**

- State role: The Newborn Hearing Screening Program (NHSP), in the Early Intervention Section of the Children with Special Health Needs Branch of the Family Health Services Division, DOH, has statewide responsibilities for assuring that all infants born in Hawaii are screened for hearing.
- Screening began in two Honolulu hospitals in 1992, and all birthing facilities in Hawaii were screening by the end of 1999. Newborn hearing screening is now part of the standard of care for newborns.
- NHSP works with birthing facilities, primary care providers, medical specialists, audiologists, parents, early interventionists, and others to implement the program. NHSP provides assistance with follow-up for infants who need rescreening or referrals for audiological assessments, and tracks follow-up for infants monitored for late onset hearing loss. NHSP continues to work with hospitals and primary care providers to assure that follow-up is provided. NHSP provides outreach to homebirth families through midwives.
- Updated HI\*TRACK software, technical assistance and software support were provided to birthing hospitals to support efficient data reporting of newborn hearing screening results to NHSP. Alternate methods of data submission are being explored for 2 of 14 hospitals.
- NHSP monitors hospital inpatient and outpatient newborn hearing screening rates and provides technical assistance to address barriers to screening, such as outdated screening equipment or lack of backup equipment. By the end of 2004, 8 of 14 hospitals had backup equipment and 2 had replaced outdated equipment. NHSP and the Newborn Metabolic Screening Program began coordinating quality assurance efforts to more efficiently identify infants who need additional follow-up due to missed screens.
- NHSP continues to develop and disseminate public awareness materials to inform parents, early intervention providers, physicians, and other health care professionals about universal newborn hearing screening and the importance of early intervention services for infants with hearing loss. A practitioner’s manual is under development.

State coordination with other agencies and organizations: The Early Hearing Detection and Intervention Advisory Committee advises the Newborn Hearing Screening Program, the Baby Hearing Evaluation and Access to Resources and Services (HEARS) Project, and the Tracking, Integration and Research for Early Screening, Assessment, and Intervention (EASI) Project (funded by the Centers for Disease Control and Prevention). The committee includes: parents, AAP-Hawaii Chapter, Center for Disabilities Studies, early intervention programs, Hawaii Academy of Audiology, Hawaii Speech Language and Hearing Association, Hawaii Center for the Deaf and Blind, UH/Department of Pediatrics, hospital newborn hearing screening program, Gallaudet University regional center, Hawaii Kids Count, and pediatric audiologists.

- Relevant in-service training is provided for hospital newborn hearing screening staff, audiologists, physicians and early intervention providers to improve the quality of newborn hearing screening and audiological follow-up in Hawaii. NHSP works closely with Hawaii's American Academy of Pediatrics-Hawaii Chapter EHDI Champion to increase awareness regarding early hearing detection and intervention.
- Geographic availability/distribution: Screening is available statewide at all birthing facilities and at various outpatient locations.
- Funding mechanism: NHSP staff positions are state funded. Currently NHSP receives Universal Newborn Hearing Screening grant funding from the Maternal and Child Health Bureau for a Baby Hearing Evaluation and Access to Resources and Services (HEARS) project to further improve newborn hearing screening and follow-up in Hawaii. Grant funding supports educational materials, continuing education, newborn hearing screening equipment for birthing facilities, and other program expenses. Birthing facilities obtain reimbursement for newborn hearing screening from health insurance.
- Legislative mandate: The State law is H.R.S. §321-361 to 363, Statewide Newborn Hearing Screening. State administrative rules are now being drafted.
- Needs: See "Newborn Hearing Screening" under "CSHCN Core Outcome #4: Early and Continuous Screening", in the section "Population and Health Status".
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- **Early Intervention Services**
- State role: The Early Intervention Section of the Children with Special Health Needs Branch of the Family Health Services Division, DOH, is the lead agency responsible for the statewide system of early intervention (EI) services for infants/toddlers 0-3 years who are developmentally delayed or biologically/environmentally at risk.
- EI services include: assistive technology, audiology, family training, counseling, home visiting, health services, medical services (diagnostic/evaluation), nursing, occupational therapy, physical therapy, psychological, social work, special instruction, speech pathology, transportation, vision services. EI services are typically provided in natural environments by EIS, Healthy Start, and Public Health Nursing Branch (PHNB), and through state and contracted programs, fee-for-service providers, and other programs such as Early Head Start.

EIS is responsible for developing, maintaining, and improving components of the statewide EI system, including: a central directory of service providers, public awareness, child find, evaluation/assessment, Individual Family Support Plan (IFSP), personnel standards, procedural safeguards, complaint resolution, interagency agreements, data collection, and quality assurance. Public awareness activities include participation in health fairs and other community activities, brochures, newsletters, and information to pediatricians/family practitioners. Information is included in hospitals' birth packets.

State coordination with other agencies and organizations: The Hawaii Early Intervention Coordinating Council (HEICC) advises the Director of Health on issues related to the planning, implementation, evaluation, and monitoring of the statewide system of early intervention services, and assists the DOH in achieving the full participation, coordination, and cooperation of all appropriate public agencies in the state. Members are

appointed by the Governor and include: parents of children with special needs, early intervention providers, legislators, pediatrician, and representatives from the DOE, DHS, University of Hawaii (UH), and health insurance. Membership of the HEICC will be expanded to meet the new requirements in IDEA 2004.

- EIS works collaboratively on various initiatives, projects and services with the Hawaii State Department of Human Services (DHS) (Keiki Care project, Inclusion Project, EI services through QUEST managed care), Hawaii State Department of Education (DOE) (State Improvement Grant II, transition, early intervention services as an Extended Year Services option), and the DOH/Child and Adolescent Mental Health Division (CAMHD) (internal reviews Project COACH). EIS also participates in an Interagency Quality Assurance Taskforce that includes DOE, CAMHD, DHS, and Hawaii Families as Allies and focuses on how to streamline the internal review process so it is more effective.
- Geographic availability/distribution: Early intervention services are available statewide, on all islands.
- Funding mechanism: Funding includes federal funds under Part C of IDEA, state funds, EI Special Fund from QUEST reimbursement for EI services provided to Medicaid-eligible children, state funds from other programs when available when EIS is in deficit, and as necessary, emergency state funds through the State Legislature.
- Mandates: Part C of Individuals with Disabilities Education Act (IDEA), State law is H.R.S. §321-351 TO 357. The EI system was under the Felix Consent Decree until May 2005.
- Needs: Addressing temporary service gaps due to staff vacancies, recruiting difficulties, increased travel time to serve children in natural environments, insufficient number of providers; changing its State Plan and State Statutes due to the reauthorization of IDEA 2004; developing a 6-year Office of Special Education Programs (OSEP)-required State Performance Plan; change some aspects of the EI system based on the new requirements of IDEA 2004, including identifying serving children who are confirmed child abuse and neglect and homeless children; work toward 100% compliance with IDEA Part C requirements, especially in the area of comprehensive developmental evaluations (CDE) for all children, meeting federal timelines, having complete Individual Family Support Plans (IFSPs), providing all services on IFSPs, developing appropriate transition plans, ensuring timely transition to DOE preschool special education or community programs; expanding monitoring of all EI public and private programs to identify and correct areas of noncompliance; expand EI state and contracted programs as needed to serve the increased number of children with developmental delays; monitoring and tracking the number of children served and the cost of serving all children at EI programs; obtaining adequate resources to meet needs.
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## **INFRASTRUCTURE-BUILDING SERVICES**

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### **State's Capacity to Promote Comprehensive Systems of Services**

- To assess the capacity to promote comprehensive systems of services, a framework is the "Ten Essential Public Health Services to Promote MCH" applied to CSHCN (from: "Public MCH Program Functions Framework: Essential Public Health Services to Promote MCH in America, prepared by H.A. Grason and B. Guyer of the Johns Hopkins University Child and Adolescent Health Policy Center (1995):



1. Assess and monitor health status to identify and address problems. Efforts have included: data linkage between newborn hearing and metabolic screening with birth records; analysis of Hawaii data from the National Survey of CSHCN (2001); special analysis of Hawaii data on ease of use of community-based services from the National Survey of CSHCN (2001); analysis of Hawaii data from the National Survey of Children's Health (2003); analysis of birth defects data regarding incidence, trends, and clusters; analysis of newborn hearing screening data to determine extent and timing of screening, follow-up, and referral to early intervention services; analysis of newborn metabolic screening to determine extent of screening.

2. Diagnose and investigate health problems and health hazards affecting women. Birth defects surveillance is provided by the CSHNB/Hawaii Birth Defects Program. HBDP finds and abstract all Centers for Disease Control and Prevention (CDC) designated birth defects diagnoses (about 1,000 in Hawaii per year) within twelve months of the close of the calendar year. These are examples of how HBDP contributes to the identification of genetic, environmental hazards, and other causes or risk factors. (a) Birth defects data were used by the State Attorney General's office for cluster investigations in the Village Park and Royal Kunia neighborhoods where concerned residents perceived an increased number of birth defects due to environmental hazards, and considered initiating class action lawsuits against the State of Hawaii for damages. HBDP data showed there were no differences when comparing the prevalence of birth defects in the Village Park/Royal Kunia neighborhoods, compared with that for the entire state. (b) The Department of the Navy's "Gulf War Syndrome Project" used Hawaii as its pilot test site and HBDP data to investigate birth defects among infants of Persian Gulf War veterans born in Hawaii and among infants of military and non-military personnel in Hawaii. HBDP data showed that birth defects overall were not more prevalent in Gulf War veterans.

3. Inform and educate the public about CSHCN issues.

- Newborn Metabolic Screening Program conducts educational sessions for practitioners, nurses, laboratories, and birthing facilities. NBMSD distributes its newborn metabolic screening brochure to birthing facilities and providers, and updates it as needed.

The Genetics Program's project on the financial, ethical, legal, and social issues (FELSI) surrounding tandem mass spectrometry in newborn screening utilized multi-state collaboration to identify strategies and develop educational materials for a culturally and ethnically diverse population. Information obtained from the fourteen focus groups in four Western states (Hawaii, Alaska, California, and Oregon) were used to develop model educational materials. Hawaii's model newborn metabolic screening brochure is now being used to educate parents about newborn metabolic screening at the Baby Expo, health fairs, etc.

Newborn Hearing Screening Program develops and disseminates public awareness materials to inform parents, early intervention providers, physicians, and other health care professionals about universal newborn hearing screening and the importance of early intervention services for infants with hearing loss. Newborn hearing screening, audiological assessment, and early intervention brochures are available in 9 languages. Educational sessions/training are provided for hospital newborn hearing screening staff, audiologists, physicians, early intervention, and other providers to improve the quality of newborn hearing screening and audiological follow-up. NHSP works closely with Hawaii's American Academy of Pediatrics-Hawaii Chapter Early

Hearing Detection and Intervention Champion to increase awareness regarding early hearing detection and intervention.

Since 1989, Hawaii Birth Defects Program has disseminated over 1,700 pieces of information to parents, communities, and health care providers, and has given over 125 presentations, including to physicians at grand rounds and to teen/pregnant mothers in high schools. HBDP has published over 100 articles/educational pieces, including 12 in peer-reviewed professional journals.

The Early Intervention Section provides and/or supports education/training for early interventionists, public health nurses, Healthy Start providers, Early Head Start staff, fee-for-service providers, community preschool staff, other community providers, and family members. Areas of training include: Part C and Hawaii's requirements, care coordination, transition, Individual Family Support Plan (IFSP), supporting children with challenging behaviors, support for families of children with hearing loss, and other areas.

Information about CSHCN, including Hawaii data from the National Survey of CSHCN and from the National Survey of Children's Health, is provided at various conferences, meetings, councils, or advisory groups.

4. Mobilize community partnerships between policymakers, health care providers, families, general public, and others to identify and solve CSHCN problems. See "Coordination Efforts" (below).

5. Provide leadership for priority-setting, planning, and policy development to support community efforts to assure the health of CSHCN. See Hilopa'a Project in "State Program Collaboration with Other State Agencies and Private Organizations" in the section on "Four Constructs of a Service System" below.

6. Promote and enforce legal requirements that protect the health and safety of CSHCN, and ensure public accountability for their well-being. During the past 10 years, CSHNB has initiated legislative bills that became law:

- 1996 Amendment to newborn metabolic screening law. A special fund was established to provide program funding (H.R.S. §321-291).
- 1997 Genetic information non-discrimination in health insurance coverage (H.R.S. §431:10A-118, 432:1-607, §432D-26).
- 1999 Mandated insurance coverage for medical foods and low-protein modified food products for metabolic disorders (H.R.S. §346-67, §431:10A-120, §432:1-609, §432D-23).
- 2001 Amendment to the newborn hearing screening law to mandate newborn hearing screening for all infants, require the reporting of screening results to the DOH, and allowed the DOH to develop rules regarding screening (H.R.S. §321-361-363).
- 2002 Genetic information non-discrimination in health insurance coverage (H.R.S. §431:10A-404.5, §432:2-404.5). Genetic information non-discrimination in employment (H.R.S. §378:1).
- 2002 Establishment of a birth defects program in the DOH, funded by a special fund of \$10 of each marriage license fee (deposited into a special fund (H.R.S. §321-421)).
- Legislative activities included drafting bills and justifications, drafting testimony, and involving key partners such as other consumers, family advocacy organizations, professional organizations, community agencies, and others.

- 7. Link CSHCN to health and other community and family services, and assure access to comprehensive, quality systems of care. See “Availability of Specialty Care”, “Linkages That Promote Provision of Services and Referrals Between Primary Care, Specialized Secondary Care, and Highly Specialized Tertiary Care” Relationship of Title V with Others in the State Who Address Inadequate, or Poorly Distributed, Health Care Resources” in the section on “Direct Health Care And Enable Services”.
- 8. Assure the capacity and competency of the public health and personal health workforce to effectively address CSHCN needs. See “3. Inform and educate the public about CSHCN issues” above. In addition, health professionals and state/community program staff have opportunities to participate in various trainings, conferences, web-casts, in-services, and other relevant trainings in Hawaii provided by state agencies, University of Hawaii/School of Medicine/Department of Pediatrics (continuing medical education), professional organizations such as the American Academy of Pediatrics-Hawaii Chapter or the Hawaii Public Health Association, community agencies, State Council of Developmental Disabilities, University of Hawaii Center on Disability Studies, etc. There are also opportunities to attend trainings in the continental U.S. locations, such as those on early childhood comprehensive systems planning, early hearing detection and intervention, epidemiology conferences, or Part C of IDEA, which may be funded through HRSA, CDC, or Office of Special Education. Technical assistance may also be obtained.
- The Hawaii Maternal and Child Health Leadership in Education in Neurodevelopmental and Related Disabilities (MCH LEND) Program prepares health professionals for leadership roles to improve supports and services for CSHCN. The Hawaii MCH LEND, funded by the MCH Bureau, is a program of the University of Hawaii/Center of Disability Studies. During the upcoming year, the MCH LEND will focus on the following:
  - Applied Research: In conjunction with the Hilopa’a Project and the State QUEST Expanded Advisory Council, MCH LEND trainees will be conducting focus groups of families of CSHCN and potentially some youth to explore their understanding of Managed Care. The findings of the focus groups will be used to design outreach materials and training curriculum which will be incorporated into the Request for Proposal the state will release to procure outreach services to facilitate the transition. The information from the focus groups will also be provided to prospective health plans to better understand their future client base.
  - Public Policy & Advocacy: MCH LEND trainees will be studying the revisions and enhancements found in the Reauthorization of IDEA. Upon completion of their review, trainees will provide public comment and testimony to the state Lead Education Agency, during their public comment hearings. Trainees will be asked to prepare their testimony based upon the perceived impact on their disciplinary role as a provider as well as the impact on the families that they serve.
  - Support Systems: Each year, the State Council on Developmental Disabilities sponsors a “Day at the Capitol” to encourage family members and self advocates to come and meet with their legislators during the legislative session. This year, the MCH LEND trainees will assist with the planning and implementation of the event. They will also work to recruit families of children and youth ages 0-21 to augment the large adult consumer population that attends on a regular basis. The trainees will also work with families to develop materials for table top displays.
- 9. Evaluate the effectiveness, accessibility, and quality of personal and population-based health services.  
See “Standards, Guidelines, Monitoring, Evaluation, Quality Improvement” below.
- 10. Support research and demonstrations to gain new insights and innovative solutions to CSHCN health-related problems. Formal research projects within CSHNB are: “An Investigation of the Epidemiology of

Hearing Loss in Infants and Young Children”, which includes genetic causes of hearing loss; and “Efficacy of Early Identification of and Intervention for Congenital Hearing Loss” (CSHNB, Early Hearing Detection and Intervention/Early Screening, Assessment, and Intervention” [EASI] Project, funded by the CDC). Hawaii data from the 2001 National Survey of CSHCN were used to study factors contributing to difficulty using community-based services by families of CSHCN, in a collaborative study of the Department of Public Health at the University of Hawaii/School of Medicine, FHSD/MCH Epidemiologist, and DOH/CSHNB; the article has been accepted for publication in the Maternal and Child Health Journal. Since 1989, HBDP conducted special birth defect cluster studies and other research studies, and has published over 100 articles/educational pieces, including 12 in peer-reviewed professional journals.

### **Coordination Efforts**

The Title V CSHCN program participates in a network of coalitions, advisory groups and coordination efforts throughout the state.

Within the **Department of Health**, Title V CSHCN works with the District Health Offices and various Divisions/programs including Community Health Division, Developmental Disabilities Division, Dental Health Division, Child and Adolescent Mental Health Division, Office of Health Status Monitoring, State Health Planning and Development Agency, Maternal and Child Health Branch, and WIC Services Branch. Areas of collaboration include early childhood comprehensive systems development, oral health, craniofacial disorders, nutrition for CSHCN, care coordination for early intervention services, linkage of birth records with newborn hearing and metabolic screening data, and access to specialty services on Neighbor Islands.

CSHNB/Early Intervention Section (EIS) is the lead agency for Part C of IDEA. EIS works the **Department of Education** (DOE) in several areas:

- The State Improvement Grant II is a collaborative effort of the DOE, University of Hawaii Center on Disability Studies, DOH/EIS, and DOE/Parent Training Information Center to improve systems providing early identification, educational, early intervention, and transitional services to children with disabilities. Through a Memorandum of Agreement with DOE, EIS will be funded to identify and address barriers to early identification of infants/toddlers with disabilities, improve the process of transitioning eligible children and their families from the Early Intervention Program to DOE preschool special programs or other options, and assist in the process and outcome evaluation plan.
- EIS and DOE collaborate on the transition of children receiving early intervention services to the DOE special education program. EIS and DOE developed transition materials and regularly provide joint training to early interventionists, DOE staff, families, and other community members.
- To support the transition of young children with autism, the DOE is utilizing space at an early intervention program for a DOE classroom and regularly includes children under age 3 with autism in classroom activities.
- EIS and DOE are continuing a pilot project to support the continuation of early intervention services as an Extended Year Services option for eligible children who turn age 3 during the summer months and are eligible for DOE preschool special education services.
- EIS collaborates with the DOE and DOH/Child and Adolescent Mental Health Division (CAMHD) by implementing internal reviews for children from birth to age 3. This is a methodology to “test” whether children are learning and developing appropriately, and whether the system performs in such a way as to support the growth, development, and education of children. This coming year’s

focus is on children in the transition process between early intervention and preschool special education, to identify both the strengths and needs in the transition process. EIS also participates in an Interagency Quality Assurance Taskforce that includes DOE, CAMHD, DHS, and Hawaii Families as Allies and focuses on how to streamline the internal review process so it is more effective.

**Department of Human Services/Med-QUEST** Division provides funding to FHSD through a Memorandum of Agreement for early intervention services provided by the Early Intervention Section, Healthy Start, and Public Health Nursing Branch, through a carved-out, non-risk, capitated plan offered by DOH for QUEST-eligible infants and toddlers who are developmentally delayed or biologically/environmentally at risk.

DHS/Benefits, Employment, and Support Services Division (BESSD) provides funding for EIS through Memoranda of Agreement for the Inclusion Project which provides tuition support for infants/toddlers with developmental delays to participate in child care or community-based programs; and for the Keiki Care Project which provides technical assistance and training to community preschool staff serving children ages 3-5 with behavioral challenges and their families.

DHS/BESSD also provides funding to CSHNB for a Healthy Child Care Hawaii project (see below).

DHS/Disability Determination Branch refers children under age 16 years with disabilities who are medically eligible for Supplemental Security Income (SSI) to the Children with Special Health Needs Program (CSHNP). CSHNP provides outreach, assessment, information/referral, and/or service coordination as needed, regarding medical, education, and social needs. These are “rehabilitation” services required by Title V for individuals under age 16 years receiving benefits under Title XVI of the Social Security Act.

CSHNB/Children with Special Health Needs Program (CSHNP) Audiologist worked with DHS Med-QUEST Division (MQD) on the Medicaid coverage for hearing aids for Medicaid-eligible individuals less than 21 years of age. Following the CSHNP model, MQD was able to arrange discounted rates with a hearing aid manufacturer. MQD also obtained input from community audiologists prior to finalizing changes. Medicaid fee-for-service changes included coverage for digital hearing aids, manufacturer’s hearing aid loss/damage extended warranty, manufacturer’s hearing aid accessories without charge with the initial purchase of hearing aids, and clearer process for prior authorization. Medicaid also arranged with the CSHNP Audiologist to make available the manufacturer’s hearing aids for “trials”.

The **Hawaii Early Intervention Coordinating Council (HEICC)** advises the Director of Health on issues related to the planning, implementation, evaluation, and monitoring of the statewide system of early intervention services, and assists the DOH in achieving the full participation, coordination, and cooperation of all appropriate public agencies in the state. Members are appointed by the Governor and include: parents of children with special needs, early intervention providers, legislators, pediatrician, and representatives from the DOE, DHS, University of Hawaii/Center on Disabilities Studies, and health insurance. Membership of the HEICC will be expanded to meet the new requirements in IDEA 2004.

The **Creating Opportunities for All Children (COACH) Project** is an EIS project funded by the DOH/Child and Adolescent Mental Health Division through a Memorandum of Agreement. This project provides technical assistance and consultation to community preschool staff serving children ages 3-5 who were in early intervention services, are not DOE eligible, but continue to have social/emotional/behavioral challenges.

**Tracking, Integration and Research for Early Screening, Assessment, and Intervention (EASI)** project is a collaborative effort of CSHNB with the UH Center for Disabilities for data integration and research studies related to early hearing detection and intervention. EIS provides space and use of equipment to UH Center for Disabilities Studies staff. Project is funded through a CDC cooperative agreement.

The **Special Education Advisory Council (SEAC)** is an advisory committee to the Superintendent of Education for policies on any issues in the education of students with disabilities. Appointed members include representative of consumer advocate groups, parents, individuals with disabilities, regular and special education personnel, DOH, DHS, and UH. The Council has been actively working with the DOE and voicing its concerns about enhancing the work environment and improving the recruitment and retention of qualified special education teachers and other support staff. The Council is working with the DOE in its implementation plan for a Comprehensive Student Support System (CSSS) and school-based mental health services, training initiatives, and assuring that educational needs of special education students within the Justice System are being addressed. EIS is represented on SEAC.

The **Newborn Metabolic Screening Advisory Committee** consists of consumers and professionals (physicians, laboratory personnel, nurses from various birthing facilities, medical insurance plan representatives, parents, and other DOH representatives) from the private and public sectors. The committee's purposes are to provide support, guidance, and feedback to DOH about newborn screening; disseminate information about newborn screening to colleagues and the community; monitor accountability and quality of the newborn screening program; and discuss ideas and issues relevant to newborn screening.

The **Hawaii Birth Defects Program (HBDP)** Advisory Committee is composed of representatives from the community, medical, university, and public and private sectors. Members offer scientific guidance and input into the program and have expertise in the areas of children with special health needs, service delivery, epidemiology, research, family health, fetal diagnosis, genetics, health information management, maternal and child health, neonatology, nursing, pediatrics, perinatology, public health, and fetal/pediatric ultrasonography.

The **State Genetics Advisory Committee** consists of representatives from public health, health care organizations, consumers, laboratories, insurance, policy makers, and other interested organizations such as the March of Dimes. The Committee advises the DOH about genetics activities and helps disseminate information about these activities.

The **Healthy Child Care Hawaii (HCCH) Advisory Team** includes the American Academy of Pediatrics (AAP)-Hawaii Chapter, UH/Department of Pediatrics, DOH, DHS, DOE, parents of young children, pediatrician health consultants, early childhood centers, Head Start, Hawaii Association for the Education of Young Children, Hawaii Medical Home Implementation Project, Hawaii Covering Kids, Good Beginnings Alliance, and People Attentive to Children. HCCH promotes the health and safety of young children in child care. Project activities include: recruit, train, and link health consultants to child care programs; train pediatric residents in promoting quality child care and providing health information to families and staff in child care settings; and promote the Caring for Our Children National Health and Safety Performance Standards for child care programs. This is a collaborative project of DOH/CSHNB, University of Hawaii/School of Medicine/Department of Pediatrics,

American Academy of Pediatrics-Hawaii Chapter, and DHS. Funding, originally from the MCH Bureau, is now provided by DHS.

The **Early Hearing Detection and Intervention Advisory Committee** advises the Newborn Hearing Screening Program, the Baby Hearing Evaluation and Access to Resources and Services (HEARS) Project, and the Tracking, Integration and Research for Early Screening, Assessment, and Intervention (EASI) Project. The committee includes: parents, AAP-Hawaii Chapter, Center for Disabilities Studies, early intervention programs, Hawaii Academy of Audiology, Hawaii Speech Language and Hearing Association, Hawaii Center for the Deaf and Blind, UH/Department of Pediatrics, hospital newborn hearing screening program, Gallaudet University regional center, Hawaii Kids Count, and pediatric audiologists.

**Hawaii Community Genetics** is a partnership of DOH/CSHNB Genetics Program, Kapiolani Medical Center for Women and Children, Queen's Medical Center, and University of Hawaii John A. Burns School of Medicine to develop clinical genetics and metabolic services in Hawaii. HCG has successfully recruited a full-time geneticist for clinical services. Clinical genetics services are expanding with the addition of a hemoglobinopathy clinic, neighbor island clinics, and telemedicine visits.

The **core team of CSHNB, Family Voices, UH/School of Medicine/Department of Pediatrics, and American Academy of Pediatrics-Hawaii Chapter**, with other key state/community partners, continues to work closely together in various projects toward achieving the six core outcomes for CSHCN. Current collaborative projects are **Medical Home Implementation Project**, **Hilopa'a Project**—Integrated Services for Children & Youth with Special Health Care Needs, and a **transition & family leadership project** funded by the Champions for Progress Center (MCHB cooperative agreement with Utah State University that provides leadership support for state Title V/CSHCN programs in systems building). The same team had also been members of various CSHNB/CSHCN planning efforts, the earlier Tri-Regional State Team, and the State Team that attending the first Champions for Progress Multi-State Meeting in June 2004.

CSHNB is a member of the **State Council on Developmental Disabilities**. Act 175 of the 2001 Legislature required that the Council's membership include a representative of Title V of the Social Security Act. The Council's responsibilities include: development of the state plan which guides the development and delivery of all services for individuals with developmental disabilities, coordination of departments and private agencies, evaluation, and advocacy. Council members also include representatives from DOE special education, vocational rehabilitation, DHS Medicaid, DOH/Developmental Disabilities, community agencies, individuals with disabilities, and others.

CSHNB is participating on the **Advisory Board for Successful Transitions in Diverse Environments (STRIDE)** Mentoring Project to design, develop, implement, and evaluate an effective vocational rehabilitation model for mentoring culturally-diverse youth and young adults with disabilities as they transition into meaningful community environments, post-secondary education or employment. The target population is youth and young adults age 16-26 in transition who are referred by the Hawaii DHS/Division of Vocational Rehabilitation.

CSHNB is participating on the **Advisory Council for the Hawaii 360 Youth and Family Project**, which is implementing a pilot project to design and implement a Navigational One-Stop System in Hawaii for transitioning youth with developmental disabilities and their families. Project activities includes defining and

developing a One-Stop system certification process for agencies, utilizing [www.RealChoices.org](http://www.RealChoices.org) as a virtual one-stop center, and developing a system to track and provide coordinated services and supports for youth/families. This is a collaborative project of the Department of Labor and Industrial Relations/Office of Community Services, State Council of Developmental Disabilities, University of Hawaii/Center on Disability Studies, Hawaii Disabilities Rights Center, and DOH/Developmental Disabilities Division.

The Hawaii Birth Defects Program Coordinator is a member of the **Hawaii Perinatal Consortium (HPC)**, a statewide leaders' forum to share information and data, define the unique needs of Hawaii, and promote strategies to improve perinatal health. HPC includes government, corporate, and community decision makers.

The CSHNB Newborn Metabolic Screening Coordinator is a member of the **Healthy Mothers, Healthy Babies (HMHB)** Coalition of Hawaii, a network of organizations and individuals committed to improving maternal, child and family health through collaborative efforts in public education, advocacy, and collaboration. HMHB distributes cross-cultural educational materials for pregnant women and provides leadership for advocacy efforts by convening quarterly meetings of perinatal providers, disseminating information, and advocating for the adoption of statutes and policies affecting perinatal health.

CSHNB, with the FHSD MCH Epidemiologist, collaborated with the **Department of Public Health at the University of Hawaii/School of Medicine** to study factors contributing to difficulty using community-based services by families of CSHCN in Hawaii. Data from the 2001 National Survey of CSHCN were analyzed community-based services easily. The article has been accepted for publication in the Maternal and Child Health Journal.

## **Four Constructs of a Service System**

### **State Program Collaboration with Other State Agencies and Private Organizations**

See "Coordination Efforts" above for program collaboration with other agencies and organizations. The following collaborative efforts address the development of community-based systems of services for CSHCN:

- The core team of CSHNB, Family Voices, UH/School of Medicine/Department of Pediatrics, and American Academy of Pediatrics-Hawaii Chapter, with other key state/community partners, are collaborating on the Hilopa'a Project-Integrated Services for Children & Youth with Special Health Care Needs, and a transition & family leadership project funded by the Champions for Progress. The project aims to improve the access for CYSHCN and their families to quality, comprehensive, coordinated, and community-based systems of services. Its eight goals are: transitions, navigating the system training, family resources, family participation, medical home residency education program, monitoring managed care for CYSHCN, transitioning to adult health care, and developmental screening and follow-up. Project activities include: develop and implement a "One Stop/Transition Certification" Program for programs, agencies, providers and families based upon the best practices, protocols, and standards for referral/transition for programs in DOH and DHS or their contracted providers; develop and provide training on navigating the system for families of CSHCN age 0-3 and families for middle school youth with special health care needs prior to age 14; enhance current opportunities for family support and training to better meet the needs of families in their communities; develop a resource pool of parents and self-advocates to be strategically linked to programs serving CSHCN to participate as trainers,



family representatives and partners; and convene a paid Youth Advisory Committee of 6-9 youths/self-advocates to develop personal leadership, self determination and community advocacy skills. Project activities are now at the beginning stage of development and implementation.

The Hawaii Early Intervention Coordinating Council (HEICC) advises on issues related to the planning, implementation, evaluation, and monitoring of the statewide system of early intervention services, and assists DOH in achieving the full participation, coordination, and cooperation of all appropriate public agencies in the state. HEICC members include parents of children with special needs, early intervention providers, legislators, pediatrician, and representatives from the DOE, DHS, University of Hawaii/Center on Disabilities Studies, and health insurance.

CSHNB is participating on the Advisory Council for the Hawaii 360 Youth and Family Project, which is implementing a pilot project to design and implement a Navigational One-Stop System in Hawaii for transitioning youth with developmental disabilities and their families. Project activities include defining and developing a One-Stop system certification process for agencies, utilizing [www.RealChoices.org](http://www.RealChoices.org) as a virtual one-stop center, and developing a system to track and provide coordinated services and supports for youth/families. This is a collaborative project of the Department of Labor and Industrial Relations/Office of Community Services, State Council of Developmental Disabilities, University of Hawaii/Center on Disability Studies, Hawaii Disabilities Rights Center, and DOH/Developmental Disabilities Division.

The State Council on Developmental Disabilities is responsible for the development of a state plan which guides the development and delivery of services for individuals with developmental disabilities, coordination of departments and private agencies, evaluation, and advocacy. Council members include representatives from DOH/CSHNB, DOE special education, vocational rehabilitation, DHS Medicaid, DOH/Developmental Disabilities Division, community agencies, individuals with disabilities, and others. The Council has four committees – Community Supports; Employment & Education; Health & Early Childhood; and Public Awareness, Self-Determination & Training Committee. Committee goals that support the core outcomes for CSHCN include: persons with developmental disabilities are employed consistent with their interests and abilities; school transitions are meaningful and individualized consistent with the principles of self-determination; people with developmental disabilities have access to needed medical and dental care; children with developmental disabilities and their families have access to services needed for optimal health care and support; appropriate family-centered, community-based, culturally-appropriate services and supports are available to all young children with special needs; individuals with developmental disabilities and their circles of support have increased self-advocacy skills; individuals/families have the information and supports to make informed choices, and receive services based on individual choice and self-determination.

#### State Support for Communities

Different State programs provide community supports related to the program focus. CSHNB (EIS, CSHNP), Public Health Nursing Branch, Developmental Disabilities Division, and Child and Adolescent Mental Health Division have staff/programs/offices located in various communities throughout the state, in order to provide community-based services for families. CSHNP arranges neurology, cardiology, endocrinology, and nutrition

clinics at community-based Neighbor Islands. EIS provides early intervention programs on all islands that are either state programs or contracted services through community agencies, and provides technical assistance, education/training, and common protocols and data collection. The Newborn Hearing Screening and Newborn Metabolic Screening Programs provide guidelines, technical assistance, and training/education at community birthing facilities. Financial support for travel is provided by various programs for attendance by Neighbor Island staff and community members at Oahu educational conferences, training, or meetings of task forces, advisory committees, etc.

#### Coordination of Health Components of Community-Based Systems, and Coordination of Health Services with Other Services at the Community Level

Coordination of health and other services at the community level is coordinated in part by physicians/medical homes. Other care coordinators at the community level include CSHNP nurses and social workers, Early Intervention social workers, public health nurses, developmental disabilities case managers, EPSDT care coordinators, medically fragile waiver care coordinators, hospital case managers, health plan care coordinators, and others. A general effort is made toward a family having only a single care coordinator. CSHCN/families are referred as needed to social services/programs such as housing, employment, child protection, child care, medical assistance, Temporary Assistance for Needy Families, etc.

Because of the complexity of navigating the service systems, the Hilopa'a Project includes developing and implementing a "One Stop/Transition Certification" Program for programs, agencies, providers and families whose framework is based upon the best practices, protocols, and standards for referral and transition for programs in DOH and DHS or their contracted providers; and developing and providing training on navigating the system for families of CSHCN age 0-3 and families for middle school youth with special health care needs prior to age 14.

### **Standards, Guidelines, Monitoring, Evaluation, Quality Improvement**

#### **Early Intervention Services**

The Early Intervention (EI) State Plan articulates components for the statewide system for early intervention services for children age 0-3 years, including: Hawaii Early Intervention Coordinating Council composition and functions, state definition of developmental delay, central directory, comprehensive child find system, evaluation and assessment, individualized family support plans, statewide system of early intervention services, natural environments, timetables for serving all eligible children and toddlers, public awareness program, personnel standards, comprehensive system of personnel development, procedural safeguards, supervision and monitoring of programs, lead agency procedures for resolving complaints, policies and procedures related to financial matters, interagency agreements and resolutions of disputes, policy for contracting services, and data collection.

EI quality assurance (QA) assures that a) all children under the age of 3 with developmental delays and their families are provided, through a family-centered, community-based, coordinated process, the necessary early intervention services to meet their needs; and b) all services are provided in conformance with federal

IDEA Part C and state requirements. The 4-year cycle includes:

- 1) On-site monitoring of EI programs.
- 2) Focused monitoring of all Part C programs (Early Intervention Section [EIS], Healthy Start, Public Health Nursing Branch) using the same monitoring instrument which was developed by EIS with input from all Part C agencies and family members, the same criteria to identify charts to review, and same training for monitors to ensure consistency in the monitoring. A statewide parent survey was also developed and distributed to a sample of parents to gather feedback on their opinions/satisfaction of the early intervention services and support received.
- 3) Program self-assessment.
- 4) Child/family outcomes. Internal reviews provide an objective observation of a child's and family's progress and to what extent the system supports the child and family. Outcomes for system performance include functioning service team, unity of effort across agencies, coordination of services, and problem-solving. Feedback is provided to the agencies on findings.

EIS is participating in nationwide efforts to identify appropriate child and family outcomes. Hawaii's Part C Coordinator is participating in a workgroup organized by the Early Childhood Outcomes Center to identify appropriate child and family outcomes that will be presented to OSEP as possible nationwide child and family outcomes. In addition, the Stanford Research Institute in collaboration with EIS received funding for a grant proposal to identify and pilot outcome indicators with all Hawaii's Part C programs.

Five EI QA specialists support compliance and assure that corrections will be completed/met. The EIS QA Supervisor will participate in a state procurement workgroup to identify how past performance can be incorporated/addressed in the next statewide Request for Proposal.

### **Newborn Metabolic Screening**

- The Newborn Metabolic Screening Program (NBMS) standards are established in the Hawaii Administrative Rules and in the Hawaii Practitioner's Manual. Standards include specified diseases required to be screened; hospital, birth attendant, and physician responsibilities; specimen collection; parental notification and refusal; home and non-institutional births; laboratory responsibility; fees; and special fund. The centralized laboratory Oregon State Public Health Laboratory provides monthly data for the state and each birthing facility on the percent of specimens submitted without error, specimen transit errors, specimen collection timing errors, inadequate specimen errors, and demographic data errors. NBMS provides this data to each birthing facility both monthly and in a 6 month summary, and assists birthing facilities as needed to improve their newborn screening practices.

- **Newborn Hearing Screening**

The Newborn Hearing Screening Program (NHSP) is developing a practitioner's manual. Written guidelines are in place on audiological follow-up for infants who failed newborn hearing screening.

NHSP monitors hospital inpatient and outpatient newborn hearing screening and follow-up rates, e.g., percent screened by age 1 month (statewide and by individual hospital), percent receiving diagnostic audiological evaluation by age 3 months, and enrollment in early intervention services by age 6 months. Contacting hospitals monthly to reconcile state data against hospital delivery logs is planned. As needed,

NHSP provides technical assistance to address barriers to screening, such as outdated screening equipment or lack of backup equipment. NHSP and the Newborn Metabolic Screening Program are coordinating quality assurance efforts to more efficiently identify infants who need additional follow-up due to missed screens. NHSP continues to work with hospitals and primary care providers to assure that follow-up is provided.

- **Children with Special Health Care Needs**

The Hawaii data from the National Survey of CSHCN and the National Survey of Children's Health have been the best sources for population-based data applicable to all CSHCN, related to the core outcomes. CSHNB uses these national and other local data sources as available. As needed, surveys on selected topics for a specific population group are also conducted.

**Contracts**

- Monitoring of all CSHNB purchase-of-service contracts is expected. Providers are required to give periodic reports to assure progress in the contracts. Technical assistance is provided as needed.

## CHILD AND ADOLESCENT NEEDS ASSESSMENT

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### Introduction

The health of Hawaii's children remained relatively stable over the past decade despite a decade of economic hardship for the state. Across a broad spectrum of major social and health indicators, statewide trends have varied with improvements in some areas. Examples of progress include declines in teen pregnancy and smoking rates, increasing child immunization rates and insurance coverage. When compared with the United States as a whole Hawaii's children are as healthy as or better than the nation. While Hawaii's children are not the healthiest in the nation, they are definitely healthier than average in many respects.

The national Kids Count annual assessment of child health, ranked Hawaii 20<sup>th</sup> in 2001. However, over the past decade the state's ranking has continued to slide from a high of 11<sup>th</sup> in 1994 largely due to improvements in the health of children in other states, while Hawaii indicators remained the same or declined slightly. However, of the ten indicators reviewed by Kids Count, Hawaii still places in the top tenth percentile for three indicators.<sup>55</sup>

Significant health challenges remain to prevent any further erosion of children's health in the state. A recent upturn in the state economy may help Hawaii's families. But, there are still continuing disparities in health by ethnicity, particularly for Native Hawaiians. Moreover, there are alarming trends appearing regarding childhood overweight and adolescent chlamydia that place the state squarely at the bottom in national rankings. And, there are still thousands of children in the state that continue to need assistance with basic health needs because they remained uninsured.

### Priority Needs

The State of Hawaii has recognized the need for improved health services for children to assure healthy outcomes for the future. As part of the commitment to the health of this population in the state, a Child and Adolescent (CA) Work Group was convened as a component of the Title V Needs Assessment. The work group identified five key health issues based on a review of the existing MCH priorities, stakeholder input, and compilation of research and data. Using a set of prioritization criteria, four final priorities were identified for the CA population group:

- Prevent overweight and obesity in children (continuing priority)
- Improve the oral health of children (continuing priority)
- Prevent underage drinking among adolescents
- Reduce the rate of adolescent Chlamydia

### Health Status

Improving the health and well-being of children is the primary goal of the child health care system. To assess the achievement of this goal, it is important to develop a clear picture of the health of children and

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<sup>55</sup> In Kid's Count 2004, Hawaii is in the top 10 percentile for 3 of the 10 indicators: child death, teen death, and high school dropouts. See the Annie E. Casey Foundation, *2004 Kids Count Data Book*. Baltimore, MD: 2004 or online at <http://www.aecf.org/>.

youth in Hawaii. However, childhood is a period of dependency and development with unique characteristics that make monitoring health challenging both conceptually and methodologically.

Because children are in a developmental stage of life, they generally do not develop the symptoms of chronic disease found in adults. The assumption is that childhood is generally a healthy period of life (with the exception of children who have serious congenital problems). But, poor health behaviors adopted in childhood or living in unhealthy environments clearly lay the foundation for poor health outcomes in adolescence and later as adults.

Furthermore, children's health is extremely dependent on the care they receive from their families and communities and to a lesser extent on the direct healthcare they receive. Thus, the definition of child health used in this report is very broad and includes social, behavioral and environmental factors that can affect a child's well-being and determine whether the child is adopting healthy lifestyles and habits.

For purposes of this assessment, the child and youth population is defined as 1 to 19 years of age. Since this period of life is characterized by continual and rapid physical, cognitive, emotional and social development, the manifestations of potential health problems change with age. Data on children is often classified by age groupings in recognition of these rapid developmental changes. However, there are no uniform age categories used to collect and report health data on youth. Thus, the data reported herein may vary considerably by health issue and data source.

## **Data Sources**

The data presented in this report is not a comprehensive compilation of all child health data, but merely a summary of key health data reviewed to assess the overall population health to help identify key priority health issues. Socio-economic and household data can be found in Chapter 2. Most of the data will focus on the four health priority areas for the population. As the needs assessment work continues over the next 5 years additional data review and analysis will be conducted to develop a greater understanding of the population's health and develop strategies to improve child health in the state.

For adolescents, Hawaii participates in the national Youth Risk Behavior Survey (YRBS) for grades 9-12. Participants must secure parental consent. The survey does not include dropouts or students with poor attendance. Because this is a national surveillance instrument comparable data is available for the U.S. Hawaii also recently began surveillance similar to YRBS for middle school students in grades 6-8. Both surveys are conducted on a bi-annual basis in Hawaii. However, in 2001 and 2003 the YRBS high school data has not generated a sufficient sample for weighting to the population. Thus, trend data will not be presented graphically.

For younger children of elementary school age (5-11 years), data was generated for the 2000 needs assessment from a statewide survey conducted by the Family Health Services Division (FHSD). Results of the survey can be viewed in the last needs assessment report. Additional analysis on the data regarding child overweight is presented in this report along with data for other health priorities.

## General Description of the Child Population

According to 2003 U.S. Census Bureau estimates, there are approximately 333,430 children aged 0-19 years residing in Hawaii, comprising 26.5% of the total state population. It is further estimated that 15.0% of children 0-17 years of age have special health care needs.<sup>56</sup> Despite the large majority of children residing in Honolulu county, children age 0-19 years comprise a smaller proportion of the total county population compared to the other counties. Hawaii county had the highest proportion of children under the age of 19 (29%). The challenge for the state is to provide adequate access to services and infrastructure for all children despite geographic barriers. The neighbor islands have the highest proportion of children compared to Honolulu.

<b>Table 5-1. Children Aged 0-19 Number &amp; Percentage of Total Population by County, Hawaii, 2003.</b>								
<b>Age</b>	<b>County</b>							
	<b>Honolulu</b>		<b>Hawaii</b>		<b>Kauai</b>		<b>Maui</b>	
	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
0-4 years	61,792	6.8%	10,361	6.5%	3,930	6.5%	8,990	6.6%
5-9 years	55,345	6.1%	10,626	6.7%	3,892	6.4%	8,819	6.5%
10-14 years	57,952	6.4%	12,450	7.9%	4,560	7.5%	9,451	7.0%
15-19 years	58,351	6.5%	12,626	8.0%	4,650	7.7%	9,635	7.1%
Total age 0-19	233,440	25.9%	46,063	29.1%	17,032	28.0%	36,895	27.2%
Source: U.S. Bureau of the Census. Population Estimates Branch.								

Based on the 2003 state population estimates, 70% of children resided in the City and County of Honolulu, the most urbanized of the four counties. As expected, the percentage of children living in rural areas has slightly increased since 2000 while the percentage of children in urban Honolulu is edging downward.

<b>Table 5-2 Number of Children Living in Urban/Rural Areas in Hawaii, 2003</b>	
<b>GEOGRAPHIC LIVING AREAS <sup>a</sup></b>	<b>TOTAL</b>
Living in urban areas	233,440
Living in rural areas	99,990
All children 0 through 19	333,430
Source: U.S. Bureau of the Census. Population Estimates Branch. Honolulu City & County is designated urban. The rest of the counties are designated rural.	

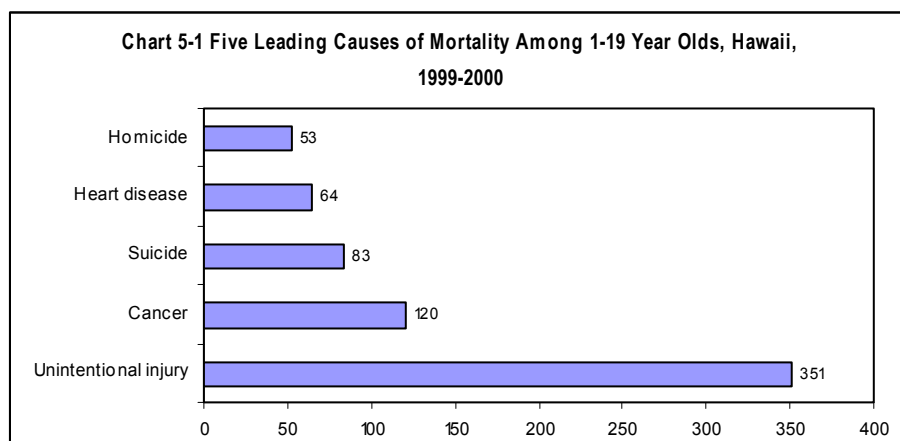
<sup>56</sup> National Survey of Children's Health, 2003. Analysis by the Hawaii State Department of Health, Children with Special Health Care Needs Branch, 2005.

## Child Mortality

Mortality is unusual in childhood but examination of death trends supplies important information about risks to children. Preliminary data for 1999 indicate there were 29 deaths of children ages 1-14, a rate of 17 per 100,000 children.<sup>57</sup> This represents a reduction of 26% in the child death rate since 1990 (24.3 deaths per 100,000 children). Hawaii's child death rate also compares well to the U.S. rate overall. The U.S. rate was 26.1 in 1998 compared to 16.7 for Hawaii in the same year. Like the U.S. trends, child death occurs at a higher rate for boys than for girls. In 1997 the rate was 20.9 for boys 1-14 years compared to 16.5 for girls of the same age in Hawaii.<sup>58</sup>

## Leading Causes of Death

For most of the leading causes of child death, Hawaii's rates are lower than the U.S average. Much like the nation, the leading cause of death for Hawaii children over the age of one is unintentional injury followed by malignant cancer, suicide, heart disease, and homicide. Chart 5-1 shows the number of deaths compiled for 1991-2000.<sup>59</sup>



The highest risk of death from injury occurs in the first few years of life. Table 5-3 shows the leading causes of death by age group. The majority of deaths for infants are due to perinatal conditions and congenital anomalies. After the first year of life, injury (both intentional and unintentional injury combined) is the leading cause of death.

<sup>57</sup> Hawaii State Department of Health, , *Vital Statistics*. [www.hawaii.gov/doh/stats](http://www.hawaii.gov/doh/stats).

<sup>58</sup> Keiki Injury Prevention Coalition, *Protecting Our Children: Strategies for Injury Prevention*, 2002, p. 4. Data on child mortality is often compiled over a period of several years because the numbers for one year are generally very small and vary dramatically from year to year.

<sup>59</sup> Keiki Injury Prevention Coalition, 2002, p. 4.



Table 5-3. Hawaii Leading Causes of Death by Age Group, 2003	
Age Group	Leading Causes of Death
Under 1 year	Perinatal conditions Congenital anomalies Symptoms, signs & ill-defined conditions
0 to 4 years	Unintentional injuries (excludes motor vehicle injuries) Cerebrovascular diseases Malignant neoplasms (cancer) Motor vehicle injuries
4 to 14 years	Malignant neoplasms (cancer) Motor vehicle injuries Unintentional injuries (excluding motor vehicle injuries) Other Respiratory diseases
15 to 24 years	Motor vehicle injuries Suicide Unintentional injuries (excluding motor vehicle injuries) Malignant neoplasms (cancer) Diseases of the heart
Source: Hawaii State Department of Health, Vital Statistics Annual Reports, 2003.	

## Injury Deaths

In Hawaii, injuries account for the majority of deaths for children ages 1-19, killing more than one child every week and many of these deaths are preventable<sup>60</sup> According to the state Injury Prevention and Control Program, the leading risk areas for childhood injury in Hawaii are:

- motor vehicle incidents, accounting for almost 45% of all deaths. Teens between the ages of 15 and 18 are most at risk.
- Violent behavior, homicide and suicide together comprise 25% of all child and adolescent injury deaths.
- Drowning, responsible for 13% of deaths for children ages 0-19.<sup>61</sup>

Table 5-4 shows the leading injury deaths for several age categories from birth to 19 years compiled by the Injury Prevention and Control Program.

<sup>60</sup> Keiki Injury Prevention Coalition, *Protecting Our Children: Strategies for Injury Prevention*, 2002.

<sup>61</sup> Ibid, p. 6.

<b>Table 5-4. Leading Causes of Injury Death among 0-19 year-olds, by Age Group, Hawaii</b> <b>Percent of injury deaths within age groups, by major categories.</b>	
<b>Age Group</b>	<b>Hawaii 1991-2000 (# of deaths)</b>
0 to 4 years	Suffocation (24%) Homicides (23%) Drowning (19%) Motor vehicle –pedestrian (15%) Motor vehicle-occupant (8%)
5 to 9 years	Motor vehicle-pedestrian (26%) Drowning (16%) Other injuries (16%) Motor vehicle-occupant (14%) Motor vehicle-bicycle (12%) Homicides (7%)
10 to 14 years	Motor vehicle-occupant (23%) Drowning (23%) Suicide (16%) Motor vehicle-pedestrian (8%) Other transport (8%) Other injuries (8%)
15 to 19 years	Motor vehicle-occupant (40%) Suicide (24%) Homicide (11%) Drowning (7%) Other transport (6%)
Source: Keiki Injury Prevention Coalition, Protecting Our Children: Strategies for Injury Prevention, 2002, p. 5.	

Although rates for unintentional injury deaths for children are declining nationally, Hawaii's rate is slowly edging upward. This is largely due to the increase in motor vehicle-related deaths among children. The number of motor vehicle deaths increased from 15 in 1999 to 29 in 2003. Most of the deaths were males (73%) and most were 15 years and older (77%). The victims were usually vehicle occupants (78%). Fatality rates for the neighbor islands were higher than for Oahu. The highest rate for motor-vehicle rated youth deaths was on Maui (73 per 100,000 compared to 22 for Oahu).<sup>62</sup>

### **Intentional Injury**

Intentional injuries are defined as injuries resulting from interpersonal violence, including homicide and the self-directed violence of suicide. Homicide is largely found among infants and young children due to child

<sup>62</sup> Dan Galanis, *Overview of Childhood Injuries in Hawaii*, Injury Prevention and Control Program, Hawaii Department of Health, 2005..

abuse and neglect. Homicide in adolescence is due to an increase in violent behavior and exposure to violent situations. In Hawaii homicide is the second leading cause of injury death for children 0-4 years and the third leading cause of injury death for youth 15-19 years. Child homicide rates for Hawaii are generally lower than those found nationally.

Due to the small number of teen suicides, a three-year annual average is now used for reporting. Over the past 3 years, Hawaii has seen a slow increase in the rate of suicide for 15-19 year olds (from 7.3 to 9.0 per 100,000 deaths). Youth suicide rates are lower than those of the U.S. and continue to fluctuate considerably due to the low numbers.

Although rates for suicide deaths among youth are relatively low compared to the U.S., self-reports of suicide attempts have been consistently higher than U.S. averages. Table 5-5 reports the latest data from the YRBS on suicide behavior.

<b>Table 5-5. Percentage of High &amp; Middle School Students Reporting Suicidal Behavior, 2003</b>			
<b>Behavioral Description</b>	<b>Hawaii Middle School</b>	<b>Hawaii High School</b>	<b>U.S. High School</b>
Seriously considered attempting suicide	21.9	18.7	16.9
Made a suicide plan	13.7	17.0	16.5
Attempted suicide one or more times	10.4	11.7	8.5
Attempted suicide & had to be treated by a doctor or nurse	5.8	3.8	2.9
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.			

### Child Death Review Findings

Many injury-related deaths occur among children where the intentionality of the injury is unknown and requires more detailed investigation. As these cases are examined, interventions can be developed to address ways injuries occur.

The Hawaii Child Death Review was established in 1997 to examine the number and circumstances around child deaths. Teams in each of the counties and the Department of Defense have reviewed 679 cases from 1997-2000. Many child motor vehicle deaths (65%) were largely caused by a failure to use seat belts and child passenger car seats.

Hawaii child homicide rates remain lower than national homicide rates. In Hawaii deaths occurring to children ages 0-2 years account for 76% of child homicides. The following risk factors were identified for persons in recent contact with children of homicide deaths: history of domestic violence (35%), history of arrest (29%), history of drug abuse (24%), and history of alcohol abuse (18%). Reports to child welfare services were made in almost half (47%) of these cases.

The number of suicide deaths among 10-14 year olds was exactly half (5) that for 15-17 year old group (10). None of these children were identified as having a serious mental health problem and needing any mental health services.<sup>63</sup>

### Car Safety Restraints

Although child deaths related to motor vehicles appear to be increasing, survey results from Hawaii's Youth Risk Behavior Survey indicate the percentage of Hawaii high school students who did not use seatbelts improved from 1999 to 2003, decreasing from a high of 10.6% to 6.7%. This improvement occurs after a steady increase of non-use since 1993. Improvements in seat belt use also occurred among middle school students. Middle school students that did not use seatbelts dropped from 12.2% in 1999 to 7.1% in 2003.

Seat belt use among adults and children has been consistently better than the national average over the past 8 years due to aggressive enforcement of all safety restraint laws over the past 4 years. The annual Child Restraint Use Survey conducted by the State Department of Transportation, reported the child safety seat compliance rate for infants throughout the state climbed from 72.5% in 2003 to 87.5% in 2004. Kauai County achieved a perfect 100% compliance rate for infants. The child safety seat compliance rate for toddlers jumped from 62.2% in 2003 to 82.5% in 2004. Use of seat belts for children in the back seat also improved over 2003 from 78.1% to 88.4%. Despite this success, Hawaii continues to lag behind the national average of 94% (2002). The survey was conducted at 15 shopping malls throughout the state. Cars containing infants and toddlers were visually inspected for child seat use.<sup>64</sup>

### **Non-Fatal Injury**

Far more injuries are nonfatal than fatal, but the causes and incidence of nonfatal injury are less well documented than those of fatal injury. Nationally, injuries account for about 8% of all hospital admissions (all ages) but about 37% of all emergency room visits. Hospitalization and emergency room data for injury is difficult to collect since Hawaii does not mandate the use of External Cause of Injury Codes. The "E-codes," as they are commonly called, provide categories for the cause of injury that can be accessed and analyzed relatively quickly and easily. Only 30% of Hawaii's hospital admissions for injury are currently coded in this manner. Thus, there is limited knowledge of injury areas that rarely cause death such as playground falls and sports injuries.

One set of available data on non-fatal injury is from emergency medical services data on ambulance-attended incidents. On Oahu, there were a total of 10,000 ambulance attended injuries to children 0-19 years of age over the period 1991-2000. The most common types of injuries among infants were from choking, motor vehicle crashes and falls. Overwhelmingly, the leading cause of injury among the other age groups was motor vehicle crashes. The second leading cause of injury for 1-4 year olds was falls and for children age 5-14 pedestrian injuries involving motor vehicles were the second most common injury. For teens aged 15-19, motor vehicle crashes accounted for over half all ambulance attended injuries. Assaults are the second leading

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<sup>63</sup> Preliminary findings from Child Death Review, Hawaii Department of Health, Maternal and Child Health Branch, unpublished, 2005.

<sup>64</sup> Hawaii State Department of Transportation, Annual Traffic Safety Report Fiscal Year 2004, Honolulu, 2004. Available online at <http://www.state.hi.us/dot/publicaffairs/safecommunities/reports/dot-ar-v13-readers.pdf>.

cause for ambulance attended injury among teens age 15-19 and the third leading cause among 10-14 year olds. Ninety-three percent of the assault injuries occurred among children aged 10 or older.

Nonfatal injuries are the leading cause of long-term disability after congenital and perinatal causes. The financial cost for these subsequent conditions can be staggering and can include direct medical care, rehabilitation, child care, loss of income and productivity for parents and caretakers.

For 1998-2002 the average number of hospitalizations for non-fatal injuries among children were 1,200 per year. The rate has decreased consistently from 1998 (1,372 hospitalizations) to 2001 (1,129), then increased in 2002. Male patients outnumber females almost 2 to 1 (62% male). Males have higher rates of hospitalization for non-fatal injury at every age. Most patients are 15-19 years of age (41%). Along with 1-2 year olds, the older adolescent age group have the highest rates of hospitalization. Although children on Oahu account for the largest number of injury hospitalizations, the rates per 10,000 hospitalizations are higher for the neighbor islands.

## **Oral Health**

Poor oral health is a national public health concern for children, especially in Hawaii where children suffer from some of the worst oral health in the U.S. On key indicators, Hawaii's children consistently perform poorly compared to their national counterparts. For instance, the average number of decayed teeth among 5-9 year olds in Hawaii is 3.9 while nationally it is 1.9, virtually double the national average.<sup>65</sup>

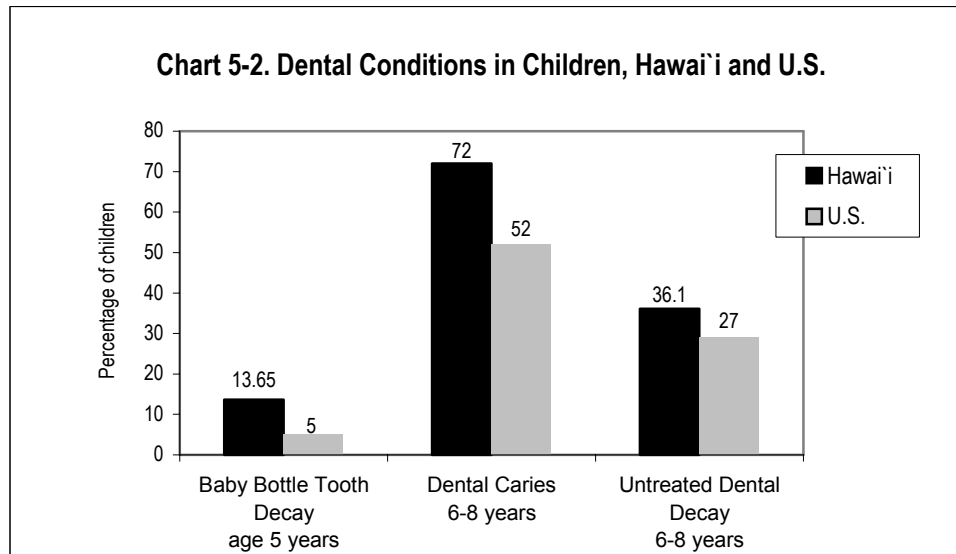
The consequences of poor oral health can be severe. Children suffering from dental problems have difficulty eating, are distracted in learning and playing, and experience reduced self-esteem from an unattractive appearance. Nationally, almost 52 million school hours - equivalent to 850,000 school days - are missed each year because of dental concerns. The cost for treatment of dental disease can be substantial and pose a major financial hardship for families without insurance coverage. The tragedy is poor oral health is largely preventable.

Data from a major dental health survey of children published in 2000 by the Dental Health Division (DHD) of the State Department of Health is the primary source of data for this section. Smaller assessments conducted by DHD indicate there has been little progress made since the 1999 survey. Data from DHD show Hawaii's young children lag behind the U.S. on three other oral health indicators: baby bottle tooth decay, dental caries and untreated dental decay (Chart 5-2).<sup>66</sup>

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<sup>65</sup> Dental Health Division, Hawaii State Department of Health, *Early Childhood Oral Health Indicators in Hawaii*, January 2000. This is the last major statewide assessment conducted on children's oral health. Smaller updates are conducted, but data is not available at this time.

<sup>66</sup> Hawaii data is from 1999 while the U.S. data is from 1997 (latest available data).



The percentage of 5 year old children in Hawaii affected by baby bottle tooth decay (BBTD) is nearly three times higher than for the U.S. BBTD can be a devastating condition, leading to the destruction of a child's primary teeth. Decayed or missing primary teeth may cause a child to be self-conscious and reluctant to smile. The pain and infection of rampant dental disease may compromise a child's ability to eat nutritious foods and develop normally, resulting in impaired speech development, failure to thrive, absence from and inability to concentrate in school and reduced self-esteem as mentioned earlier. BBTD is frequently caused by prolonged use of nursing bottles containing sugared beverages and is easily preventable.

Feeding practices of parents have a large impact on the oral health of children. Data from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) over a 4 year period show over 81% percentage of WIC parents/caregivers use feeding practices that prevent BBTD. However, there was a slight decline of these preventive practices from 85% in 1996 to 81.5% in 1999.<sup>67</sup> Counseling and reinforcement of health promoting behaviors with caregivers of children and intervention by dental and other professionals to improve parenting practices are an important means of preventing this serious oral disease.

Dental caries refer to decay in one or more teeth. It is the single most common chronic disease of childhood, occurring 5 to 8 times as frequently as asthma, the second most common chronic disease in children. In Hawaii 72% of children 6-8 years old report dental caries compared to only 52% nationally. Children age 6-8 years are at a critical stage of dental development. Their permanent teeth are erupting in their mouths. Maintaining optimal oral health for these children is important for the short-term and for the remainder of their lives.

Thirty six percent (36%) of Hawaii children between 6-8 years have untreated dental decay compared to 27% nationally. Recent data from the state Dental Health Division indicate rates for this measure may be improving slightly. Data for 2002 show the rate has dropped to 32.7%. Children who do not receive restorative treatment for existing dental caries may experience pain, suffering and developmental impairment described

<sup>67</sup> Hawaii State Department of Health, Family Health Services Division, *Title V Maternal and Child Health Service Block Grant Program Annual Report and Application*, 2000.

earlier. In addition, premature loss of primary teeth may affect spacing of permanent teeth and lead to orthodontic problems. Permanent teeth affected by decay must be promptly treated so fillings may be kept small and the natural tooth conserved. In later life, fillings have to be replaced several times. Each time additional portions of the tooth are removed, weakening the tooth integrity. Preventing the initial cavity by use of fluoride and sealants is preferable to treatment of tooth decay.

### Disparities

Certain groups of children have increased vulnerability to poor oral health conditions. At higher risk are Native Hawaiians and other ethnic groups with large immigrant populations. Table 5-6 shows Filipinos, other Pacific Islanders and Native Hawaiians have higher average numbers of decayed teeth among children 5-9 years old than the state average (3.914). Filipinos have the highest average number (5.479), followed by other Pacific Islanders (4.552) and Native Hawaiians (4.182).

<b>Table 5-6. Dental Conditions by Ethnicity, Hawaii, 2000</b>		
<b>Ethnicity</b>	<b>Average No. of Decayed Teeth among 5-9 year olds</b>	<b>% of Untreated Dental Decay</b>
African-Americans	2.056	25.44%
Caucasian	2.246	22.22%
Japanese	2.748	16.24%
Chinese	3.565	35.32%
Native Hawaiians	4.182	39.66%
Other Pacific Islanders	4.552	62.47%
Filipinos	5.479	46.08%
Source: Hawaii State Department of Health, Dental Health Division, <i>Early Childhood Oral Health Indicators in Hawaii</i> , January 2000.		

Ethnic disparities are even worse for children 6-8 years old with untreated dental decay. Sixty-two percent (62%) of Pacific Islanders (other than Hawaiians) have 6-8 year olds with untreated dental decay. Filipinos follow with 46% and Native Hawaiians with 39%.

Generally, neighbor island children are at greater risk than those on Oahu for decayed teeth with the exception of Hawaii island which had the lowest average among all the islands (Table 5-7). The remaining islands have higher averages of tooth decay than rest of the state with Lanai maintaining the highest average.

<b>Table 5-7. Number of Decayed Teeth among 5-9 year olds by Island, Hawaii, 2000</b>					
<b>HAWAII</b>	<b>Kauai</b>	<b>Lanai</b>	<b>Maui</b>	<b>Moloka'i</b>	<b>Oahu</b>
3.428	4.123	5.034	4.259	4.035	3.898
Source: Hawaii State Department of Health, Dental Health Division, <i>Early Childhood Oral Health Indicators in Hawaii</i> , January 2000.					

### Community versus Military

In 1999, the state Dental Health Division (DHD) conducted a study of dental indicators among young children to determine the impact of fluoridated water sources on their oral health. Military bases on Oahu have fluoridated water systems while the civilian community has none. Consistently, military children showed significantly better oral health than their civilian counterparts. For indicators affecting children 5-9 years, the results for the civilian children were twice as bad as those for military children. For baby bottle tooth decay among 5 year olds, the percentage for civilian children was five times the percentage for military children. The evidence supporting the positive effects of fluoridated water on children's oral health is overwhelming (Table 5-8).

<b>Table 5-8. Dental Conditions among Young Children, Civilian and Military, Hawaii, 2000</b>			
	<b>% of Baby Bottle Tooth Decay among 5 year olds</b>	<b>No. of Decayed Teeth among 5-9 year olds</b>	<b>% of Untreated Dental Decay</b>
Civilian schools	5.87%	2.328	23.20%
Military schools	0.91%	1.251	12.20%
Because of the unusually high number of differences in ethnic composition of the civilian versus military schools, the figures reported are adjusted to reflect the ethnic populations found on military bases (African-American, Caucasian and Hispanic). The non-adjusted figures show even greater disparity between the two populations. Source: Dental Health Division, Hawaii State Department of Health, <i>Early Childhood Oral Health Indicators in Hawaii</i> , January 2000.			

In 2000 Family Health Services Division conducted a statewide telephone survey of parents with children ages 5-11 years to generate data on the health of children in this age group. Generally, there is little data for this age group. Data from the survey on children's oral health is presented in (see Table 5-9).

Dietary fluoride supplements (drops and tablets) are recommended for children from birth to 16 years as an important preventive measure particularly since most of Hawaii's water supply is not fluoridated. However, only 34% of Hawaii children 5-11 years take fluoride. The highest use was on Oahu, followed closely by Kauai, Maui and Hawaii county. Typically, use of fluoride supplements is low and not considered a viable substitute for fluoridated water.<sup>68</sup>

<sup>68</sup> Communication with Mark Greer, DDS, Division Chief, Dental Health Division, Hawaii State Department of Health, 2000.



<b>Table 5-9. Percentage of Preventive Oral Health Practices among Children age 5-11 by County &amp; State, Hawaii, 2000</b>					
		<b>COUNTY</b>			
	<b>State</b>	<b>OAHU</b>	<b>HAWAII</b>	<b>Maui</b>	<b>KAUAI</b>
Fluoride drops/tablets	34.0%	35.5%	27.0%	32.8%	34.8%
Dental visit in last year	90.7%	90.9%	91.3%	88.3%	91.9%
Never visited dentist	1.6%	1.5%	2.1%	2.0%	1.5%
Difficulty getting dental care	8.2%	8.1%	8.7%	9.4%	5.9%
Have dental coverage	86.9%	86.5%	85.0%	90.3%	90.0%
Source: Hawaii State Department of Health, Family Health Services Division, 2000 Child Health Survey. Honolulu.					

Routine visits to the dentist are another important oral health practice. Generally, Hawaii children do much better with this preventive practice. The survey revealed 90.7% of children age 5-11 years visited the dentist over the last year, while only 1.6% of children never visited the dentist. Roughly 8.2% of parents reported having difficulty getting dental care.

A recent National Study of Children's Health sponsored by the federal Maternal and Child Health Bureau in partnership with the Centers for Disease Control and Prevention was conducted in 2003. Results have been recently published for children 1-17 years of age including data on oral health. State and national comparisons are provided.

Parents in Hawaii report the overall condition of their children's teeth is generally better than what is reported by parents nationally. Nearly, 98% of Hawaii parents report their child's oral health to be excellent or good as compared to 90% of parents nationally. A higher percentage of Hawaii parents also report their child has all the preventive dental care needed (96.6%) compared to the U.S. (92.9%). The results indicate access and utilization of dental services for young children may be improving.

Another indicator for dental service utilization is the number of dental sealants found in the molars of third graders. Based on DHD assessments, dental sealant rates have remained stable since from 1999 (22.3%) to 2004 (24.1).

Generally, children from families with low or modest incomes have the greatest dental needs, yet they receive the least dental care. Access to oral health care is often a problem for low-income children. Publicly funded health insurance programs have strong potential to provide and assure necessary dental care for these children, but have substantially failed to do so. In 2001, 33.8% of all Medicaid children received at least one dental service in Hawaii which placed the state 9<sup>th</sup> highest in the nation. The rates have continued to improve among Hawaii's children since that period with utilization for 2002 and 2003 at 37.5% and 37.4%, respectively.<sup>69</sup>

<sup>69</sup> Hawaii Department of Health, Dental Health Division, 2004 *Hawaii Oral Health Data Profile*, p. 16.

Children with dental insurance are more likely to obtain comprehensive, continuous and routine preventive care, necessary to improve the oral health of children. Nearly 87% of children 5-11 years have dental insurance coverage. National figures for children's dental coverage are sketchy, but estimates place the percentage of children covered at 60% at best.<sup>70</sup> Thus, Hawaii's children enjoy better dental insurance coverage than most children in the U.S.

Oral health is also closely linked to nutrition. Establishment of health promoting behaviors including wise food choices early in life can also have a major impact on the oral health of children. Child nutrition will be addressed in relation to overweight and obesity.

### **Overweight/Obesity**

Childhood obesity in the U.S. has risen dramatically in the past few decades. Approximately 25%-30% of children are affected, with many children undiagnosed and untreated.<sup>71</sup> If a child is obese at age 7, there is a 41% chance that the child will become an obese adult. If onset of obesity occurs between ages 10-13, this increases to a 70% chance. If they become obese after 13 years of age, there is an 80% chance they will become obese adults.

Many diseases are associated with overweight and obesity including high blood pressure, Type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems, and some types of cancer. The affects of these diseases can often be reduced through weight loss. Inactivity and poor diet combined contribute to obesity and the related chronic disease risk factors. It is estimated that the cost of obesity is almost \$100 billion dollars a year, or approximately 8% of the national health care budget.<sup>72</sup>

The Department of Health has dedicated much of its efforts over the past 5 years toward developing accurate prevalence data for child and adolescent obesity and overweight. Normally, children are identified as overweight or obese using a height/weight ratio called the Body Mass Index (BMI). Various standards exist to determine whether a child is considered overweight versus obese. The common source of data comes from self-reported surveys. The surveys ask respondents (either students or in the case of young children, their caregivers) to describe their (or their child's) general weight status.<sup>73</sup> The BMI is then calculated based on this self-reported information. Self-reported data is subject to bias and can misrepresent prevalence of the problem.

In 2004, the Hawaii State Department of Health (DOH) in conjunction with the Hawaii State Department of Education (DOE) examined School Health Records required for the entry of all 4 and 5 year olds into school. The forms contain information on height, weight and gender. Analysis of the data revealed Hawaii 4 & 5 year olds entering public schools have high proportions of overweight and at-risk for overweight, 28.5% overall:

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<sup>70</sup> Oral Health in America: A Report of the Surgeon General. Department of Health and Human Services, 2000. This is considered a very high estimate.

<sup>71</sup> Obesity Issue Paper prepared by the Health Promotion Program, Hawaii Department of Health, 2000.

<sup>72</sup> D Satcher, 2000. Speech by the U.S. Surgeon General, *Getting Physical: Exercising our Demons, Sedentary Lifestyles and Fatty Foods Leave Americans Overweight and Unhealthy*.

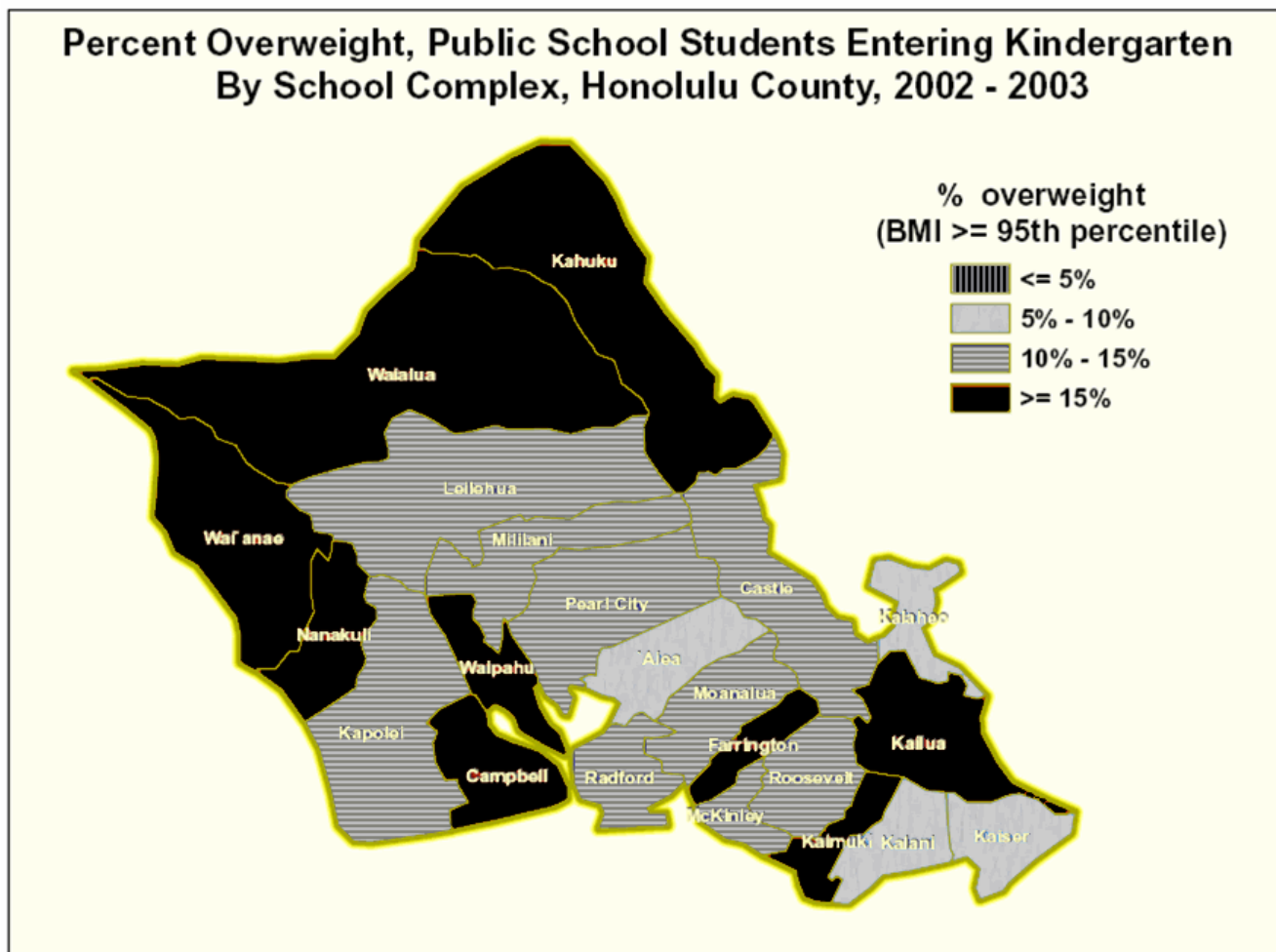
<sup>73</sup> The Hawaii 2000 Child Health Survey asks caretakers to describe whether their child is slightly or very underweight, just about right or slightly or very overweight.

14.4% overweight and another 14.1% at risk for overweight.<sup>74</sup> This percentage is similar to other states where comparable data are available.

Boys were more likely to be overweight than girls, and girls more likely to be at risk for overweight. There were some slight differences by age, with 4 year olds more likely to be overweight and at risk for overweight than 5 year olds, among both boys and girls.

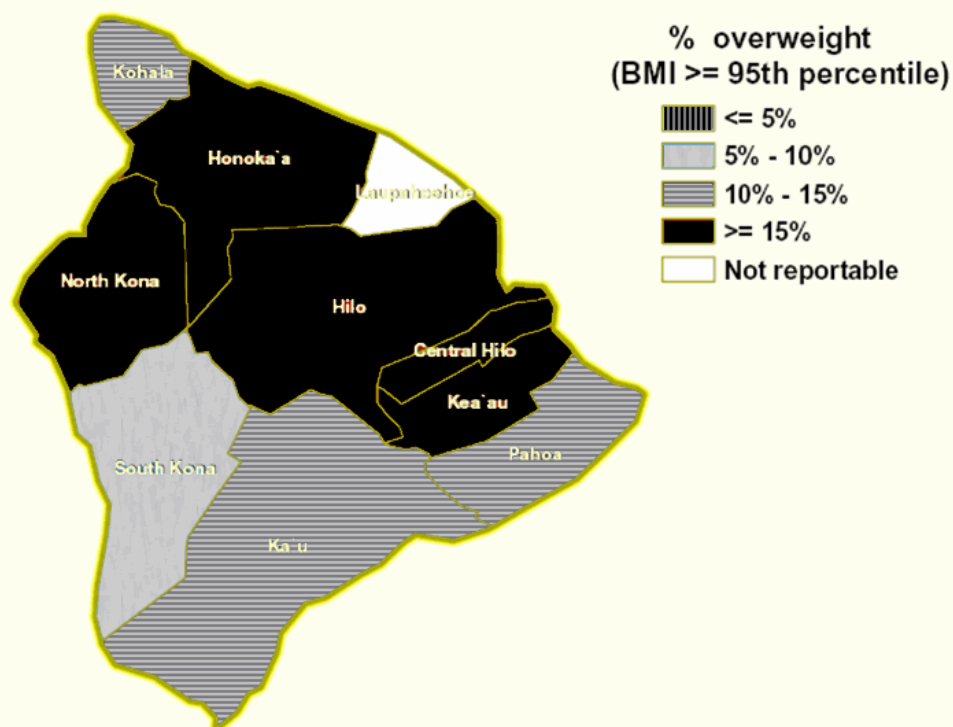
The data was mapped by the University of Hawaii Center on the Family (see following maps) by school complex (a high school and all its feeder elementary and middle schools). The problem of overweight appears to be more serious on the neighbor islands and in rural areas including rural areas of Oahu.

The implications are disturbing. The problem of childhood overweight clearly begins before children get to school at a very young age and exists in many communities throughout Hawaii. DOH is working with the DOE to secure additional demographic data from the school health records for further analysis and develop a process to continue surveillance on childhood overweight.

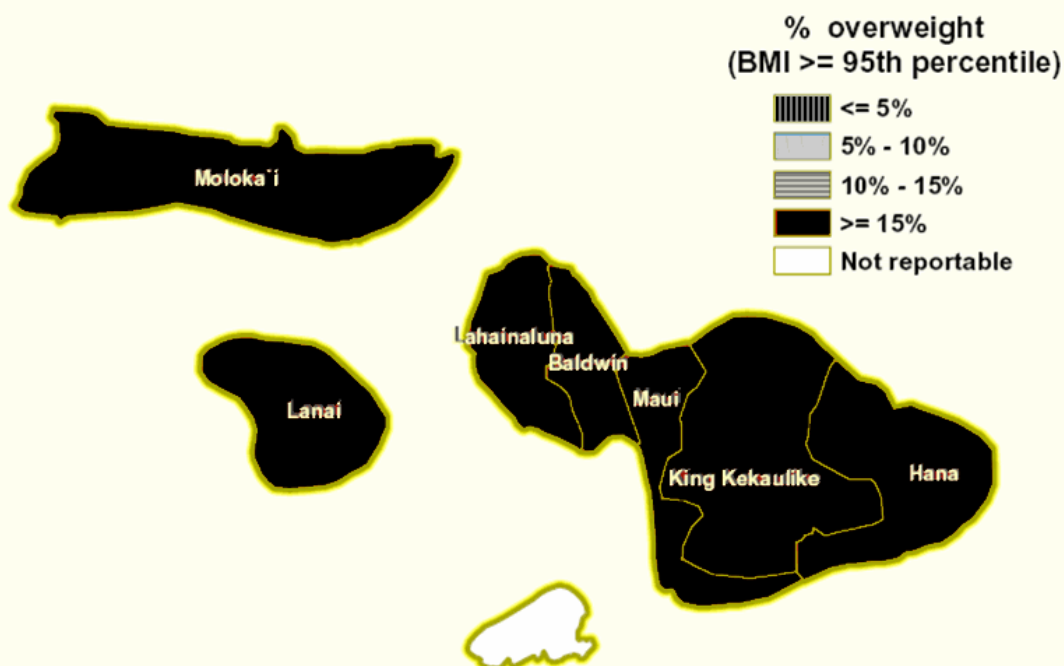


<sup>74</sup> Ann Pobutsky, Jack Huang, Olga Geling, R. Hirokawa and L. Zou, Community level correlates of overweight among public school students entering kindergarten in Hawaii. Presentation at the Pacific Global Health Conference, June 15-17, 2005.

# Percent Overweight, Public School Students Entering Kindergarten By School Complex, Hawai'i County, 2002 - 2003





# Percent Overweight, Public School Students Entering Kindergarten By School Complex, Maui County, 2002 - 2003





## Percent Overweight, Public School Students Entering Kindergarten By School Complex, Kaua'i County, 2002 - 2003

**% overweight  
(BMI  $\geq$  95th percentile)**

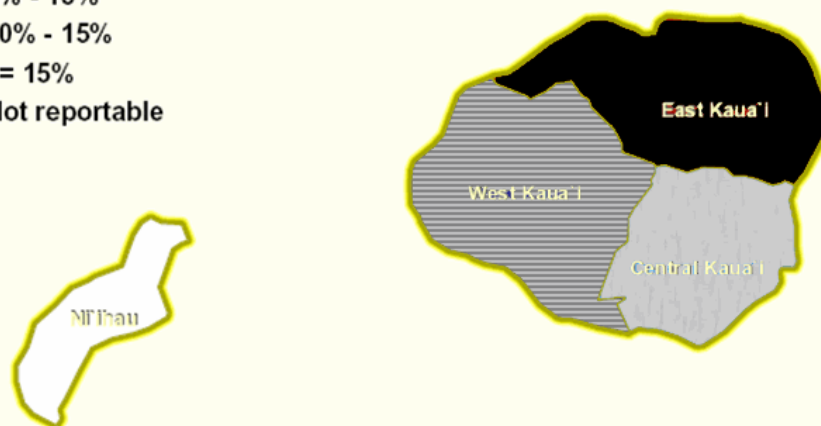
  $\leq 5\%$

 5% - 10%

 10% - 15%

  $\geq 15\%$

 Not reportable



Other data sources on the prevalence of overweight are the YRBS surveys. Table 5-10 shows the percentage of Hawaii high school students identified as “overweight” and “at-risk of becoming overweight” compared to U.S. averages.<sup>75</sup> Hawaii data suggests that students in the state are doing only better than their counterparts on the continent.

**Table 5-10. Percentage of High & Middle School Students Overweight , 2003**

Behavioral Description	Hawaii High School	U.S. High School
Overweight	13.2	13.5
At risk for overweight	14.1	15.4
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.		

Another study of WIC children was also conducted by researchers. The cross-sectional study of more than 20,000 children aged 1-4 years participating in the Hawaii WIC program in 1997-98, found that the prevalence

<sup>75</sup> Body mass index (BMI) was calculated from self-reported height and weight. At risk for becoming overweight was defined as a BMI  $>85^{\text{th}}$  percentile and  $<95^{\text{th}}$  percentile by age and sex. Overweight was defined as a BMI  $>95^{\text{th}}$  percentile by age and sex. A BMI  $>95^{\text{th}}$  percentile by age and sex among youth is approximately equivalent to a BMI  $>30$  among adults. For an adult, a BMI of 30 is approximately 30 pounds overweight.

of overweight in all ethnic groups among 2 to 4 year olds was above the expected 5% .<sup>76</sup> The study also found large ethnic differences with Samoan children having the highest rates (Table 5-11).

<b>Table 5-11. Percentage of Overweight Children Age 2-4 years enrolled in WIC, 1997-98</b>	
<b>Ethnicity</b>	<b>% Overweight</b>
Asian	9.0
Black	7.3
White	8.5
Filipino	12.4
Hawaiian	11.3
Hispanic	10.1
Samoan	27.0
Other	11.9
Total	11.4
Source: Baruffi, G., C. J. Hardy, C. I. Waslien, S.J. Uyehara, and D. Krupitsky (2004)	

### Nutrition

The most effective way to maintain a healthy weight is to eat a balanced diet that includes several servings of fruits and vegetables and to exercise regularly. Unfortunately, less than one-quarter of high school students eat five or more servings of fruits and vegetables a day. Until 1999 Hawaii students were doing better than the U.S. Now in 2003 15.3% of Hawaii high schools eat 5 servings of fruits and vegetables per day compared to 22.0% nationwide.

Table 5-12 summarizes results of the YRBS nutrition questions. There is no clear pattern between Hawaii middle and high school students with the exception of milk consumption, which appears to decrease substantially as adolescents get older. Overall, Hawaii students appear to eat less healthy foods than the students nationwide. Based on a trend analysis, Hawaii high schools students eating habits appear to be worsening over time.<sup>77</sup>

<sup>76</sup> Baruffi, G., C. J. Hardy, C. I. Waslien, S.J. Uyehara, and D. Krupitsky (2004). Ethnic differences in the prevalence of overweight among young children in Hawaii. Journal of the American Dietetic Association, Vol. 104, No.11.

<sup>77</sup> Susan Saka, Highlights of the 2003 Hawaii Youth Risk Behavior Surveys. Honolulu: University of Hawaii, Curriculum Research and Development Group. Report is available online at DOH website.

<b>Table 5-12. Percentage of High &amp; Middle School Student Eating Habits, 2003</b>			
<b>Behavioral Description</b>	<b>Hawaii Middle School</b>	<b>Hawaii High School</b>	<b>U.S. High School</b>
Ate fruit	84.6	84.5	85.2
Drank 100% fruit juice	72.5	70.4	81.8
Ate green salad	61.4	67.5	66.3
Drank mild 3+ time/day	15.5	9.8	17.1
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.			

Soft drink consumption in super-size cups and sugary fruit drinks contribute not only to obesity, but also to tooth decay. Most Hawaii middle school students report drinking soda during the week (84.8%). Drinking sodas instead of milk contributes to low calcium intake. Low calcium intake and lack of physical activity lead to poor bone development.

Breakfast consumption may have an impact on a student's ability to perform well in school, as well as on overall nutritional health. The 2000 Child Health Survey asked a few questions about nutrition including breakfast habits. Thankfully, most young children in Hawaii are eating breakfast every morning during the week (82.1%). The percentages vary among the counties with Hawaii county children having the highest rate (85.3%) and Maui county with the lowest (79.4%). Less than 1% of children across all counties never eat breakfast during the week.

Most Hawaii children eat breakfast at home (78.7%). Another 18.5% eat at school. Children in Hawaii and Maui county were more likely to eat at home and less likely to eat at school than their cohorts on Oahu and Kauai county.

High-fat and sugary snacks, fast-food/convenience foods, and lack of nutrition education contribute to poor nutrition and overweight in all ages. In today's society, dependence on quick and convenient is a way of life, and foods of this kind tend to be unhealthy and sorely lacking in vegetables and fruit. Home-cooked meals, which generally are more nutritious, are becoming a rarity in many families. The Child Health Survey reports over 1 in 4 young children ate fast foods on the day preceding the survey. The percentage is slightly higher on Oahu than on the neighbor islands. This is due largely to the over-saturation of fast food establishments on urbanized Oahu.

### Physical Activity

Physical activity throughout life is important for maintaining a healthy body, enhancing psychological well-being, and preventing premature death. Physical activity among children and adolescents provides tremendous health benefits and establishes healthy lifestyle habits that are more likely to continue into adulthood. Inactivity may be primarily responsible for the dramatic increase in child and adolescent obesity rates in the U.S. during the past decade.

<b>Table 5-13. Percentage of High &amp; Middle School Students Engaged in Physical Activity, 2003</b>			
<b>Behavioral Description</b>	<b>Hawaii Middle School</b>	<b>Hawaii High School</b>	<b>U.S. High School</b>
Exercise vigorously 20 minutes 3+ days/week	62.2	59.2	62.6
Other non-vigorous activity for 30 minutes 5+ days/weeks	33.4	20.6	24.7
Exercise to strengthen/tone muscles 3+ /week	45.8	47.1	51.9
Watched TV 3+ hours/day on average	43.3	40.3	28.2
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.			

Table 5-13 shows adolescents tend to engage in less physical activity as they get older with the exception of exercises for strengthening and toning. Hawaii high school students also seem to engage in less physical activities than their U.S. peers. Among adults, Hawaii residents have lower inactivity rates compared to the U.S. average.

Some of the environmental factors which contribute to a decrease in physical activity include lack of physical education in schools, sedentary after school activities and day care activities, lack of accessible low cost community physical activity programs, absence of organized sport opportunities for non-athletes in schools, and neighborhoods which are unsafe for unsupervised play. In Hawaii, participation in youth physical activity programs is often costly and therefore, not accessible to families with little disposable income. Working parents may also not have time to drive their children to various activity centers.

The 2000 Child Health Survey reveals 32.5% of children engaged in sports, clubs or lessons once they leave school, indicating some exposure to physical activity. The vast majority of children are at home with a parent (55.7%) while another substantial group also stay on at school in a program. Note that parents could select more than one option if their child's after school activities varied during the week.



<b>Table 5-14. After School Activities, Elementary School Age Children, 2000</b> (Percentage of children)					
		<b>COUNTY</b>			
	<b>STATE</b>	<b>OAHU</b>	<b>HAWAII</b>	<b>Maui</b>	<b>KAUAI</b>
At home with parent	55.7	55.2	54.6	59.5	57.8
Cared for by a relative	9.5	9.6	10.0	7.4	11.0
Home child care provider	1.1	1.2	1.0	.3	.7
Lessons, clubs, sports	32.5	31.5	32.3	36.9	38.0
Program at school	15.0	15.8	15.0	13.0	9.1
Program at church or community center	2.1	2.5	1.0	1.3	.7
At work with parent	.2		.8	1.0	.2
Taking care of self at home	1.3	.7	3.7	1.8	2.2
Taking care of self with friends	3.2	3.0	3.9	5.1	1.7
Other	12.6	14.0	10.2	7.9	9.3
Source: Hawaii State Department of Health, Family Health Services Division, 2000 Child Health Survey. Honolulu. Percentages sum to more than 110% due to multiple responses. Blank cells indicate the number of responses were too small to generalize to population.					

Schools are an effective means to provide physical activity and fitness instruction because they reach most children and adolescents. Participation in school physical education ensures a minimum amount of physical activity and provides a forum to teach physical activity strategies and activity that can continue through a child's life. Research has shown that schools that offer intense physical activity programs have shown: positive effects on academic achievement, including increased concentration; improved mathematics, reading and writing test scores; and reduced disruptive behaviors, even when the physical education reduces the time for academics.

Unfortunately, schools are eliminating physical education classes often replacing them with more sedentary classroom and computer activities. The State Department of Education follows the national standards for PE and requires: 120 minutes of PE per week for K-3<sup>rd</sup> grade, 90 minutes of PE per week in grades 4-6, and 200 minutes of PE per week in middle and high school. However, PE is an elective in middle school, and only one year is required for high school graduation.

Table 5-15 presents selected physical activity measures for high school students from Hawaii compared to U.S. averages. Fewer Hawaii high school students are enrolled in and attending P.E. classes daily than the U.S. average. However, when in P.E. classes, Hawaii students appear to spend more time actually exercising than their U.S. counterparts.

<b>Table 5-15. Percentage of High School Students Engaged in Physical Education in School, Hawaii and U.S. 2003</b>		
	<b>Hawaii</b>	<b>U.S.</b>
Attended in P.E. class at least once a week	37.2	55.7
Attended P.E. class daily	8.7	28.4
20 or more minutes of exercise in P.E. classes	85.5	80.3
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003		

Establishing healthy dietary and physical activity behaviors needs to begin at childhood. Research suggests that parents can influence children's eating behaviors as preschoolers, but have less influence on the choices of school-age children.

With technical assistance from the Public Policy Analysis and Education Center for Middle Childhood and Adolescent Health, Family Health Services Division has conducted further analysis of the 2000 Child Health Survey questions affecting weight. Results confirm that poor health habits begin at an early age and get worse as children get older:

- At age 5, 23% of kids spend three or more hours a day in sedentary activity; by age 11, 34% do so.
- At age 5, 2% of kids have breakfast three days a week or less; by age 11, 10% do so.
- At age 5, 21% of kids had a soda in the previous day; by age 11, 45% did so.
- At age 5, 17% of kids usually have breakfast outside the home; by age 11, 26% do so.

FHSD is collaborating with other DOH offices to address child overweight in young children as well as school age.

## **Violence & Safety**

Children need a safe and nurturing environment for healthy development. Yet, violence in the U.S. is pervasive and can change the quality of children's lives. Over the past 30 years, all major causes of childhood death from injury and disease have declined, except one—**violence**. Homicide of young children has nearly doubled, and homicide and suicide of older children have nearly tripled.<sup>78</sup> Maltreated children are at high risk for such problems as developmental delays, school-related problems, drug abuse, and physical and emotional problems throughout their lives. Youth in detention facilities frequently report histories of physical and sexual abuse. Research also suggests a link between child sexual abuse and teen pregnancy. Teens who are victimized as children tend to engage in sexual intercourse earlier, and are less likely to use contraceptives, than non-abused teens.

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<sup>78</sup> Health Resources and Services Administration, Office of Minority Health, *National Family and Intimate Partner Violence Prevention Initiative*, 1997.

### Child Abuse

In 2002, the child abuse rate was 11.8 per 1,000 population and was slightly below the national rate of 12.3.<sup>79</sup> The rate was slightly higher for females (12.3) compared to males (11.1). Among the major ethnic/racial groups, disparities are pronounced. Native Hawaiians have the highest rate (21.6), followed by Filipino (9.0). Japanese had the lowest rate (1.7) followed by Caucasians (5.9).

<b>Table 5-16. High &amp; Middle School Students Report of Violence/Safety Conditions, 2003</b>			
<b>Behavioral Description</b>	<b>Hawaii Middle School</b>	<b>Hawaii High School</b>	<b>U.S. High School</b>
Felt unsafe at school & did not go	5.7	6.6	5.4
Threatened/Injured with weapon at school	6.7	6.1	9.2
Physical fight 1+ times	31.9	26.0	33.0
Physical fight 1+ times on school property	16.4	9.8	12.8
Physically hurt by boyfriend/girlfriend	6.2	10.2	8.9
Physically forced to have sexual intercourse	5.4	8.7	9.0
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.			

Table 5-16 summarizes the YRBS for safety and violence questions. Relative to the U.S. more Hawaii students report feeling unsafe. Youth continue to be involved in violent activity as both perpetrators and victims of violence. Generally, physical fighting is more prevalent at middle school and goes down in high school. Rates are generally lower for physical fights in Hawaii compared to the U.S.

The prevalence of sexual violence among female and male high school students appears higher in the U.S. compared to Hawaii. In 2003, rates for sexual violence among Hawaii school students worsen as teens go from middle to high school.

### **Sexual activity**

Sex and sexuality pervade many aspects of today's popular culture. Despite the promotion of sexual imagery in the mass media and resulting fascination with sexual matters, Americans are generally uncomfortable about discussing sex and sexuality as a normal human function. Thus, becoming a sexually healthy and responsible person can be a difficult outcome for young adolescents. Yet, learning and practicing sexually responsible attitudes and behaviors is a key developmental task of adolescence. Unsafe sex can result in unintended pregnancies and sexually transmitted diseases, including HIV/AIDS.

### Pregnancy Rates

Since 1990 Hawaii's teen pregnancy rates have declined for ages 19 years and younger (Table 29). Significant decreases have occurred for age groups 15-17 years and 18-19 years.

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<sup>79</sup> Hawaii Outcomes Institute, *Toward a Healthy Hawaii 2010*, Honolulu, 2005. p. 73.

<b>Table 5-17. Teen Pregnancy Rates by Age Group, 1990 &amp; 2003</b> (per 1,000 women age 15-19)		
<b>Age Group</b>	<b>1990</b>	<b>2003</b>
Less than 15 years old	1.87	1.5
15-17 years old	65.4	33.1
18-19 years old	145.0	93.1
Source: Family Health Services Division, 2004. Based on Department of Health Birth, fetal death, ITOP file and Bureau of Census Estimates.		

Although the overall decreasing trend in teen pregnancy and birth rates is positive, several significant disparities exist. Teen pregnancy rates overall tend to be lower in urban than in rural areas. Pregnancy rates for the rural neighbor islands are much higher than for urban Honolulu county.

In Hawaii there are also sizeable differences in teen pregnancy by race/ethnicity. The proportion of pregnancies among 15-17 year-old Filipino (23.6 per 1,000 population) and Native Hawaiian (39.3) teens are highest among the major groups. Caucasians report the lowest rate in 2002 (4.3) followed by Japanese (7.1).

#### Adolescent Childbearing

Birth rates among Hawaii adolescents also continue to decline from 28.3 births per 1,000 teenagers age 15-17 years in 1996 to 18.8 births in 2003.<sup>80</sup> The state teen birth rate is slightly better than the U.S. average (20.5 for Hawaii in 2002 compared to 23.2 for the U.S. in the same year).

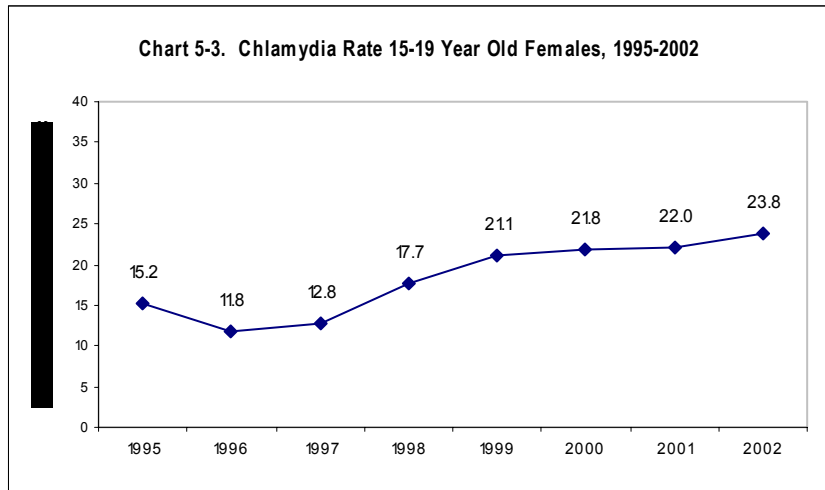
The timing of births also differs significantly by ethnicity in Hawaii. Hawaiian and Filipino women generally have their children at a younger age. Thus, of all births to Hawaiian women in 2003, 15.6% occurred to women 19 years or younger. Among Filipino women 8.7% of births occurred to teens. Hawaiian women account for 50% of teen births in 2003 and Filipino women accounted for another 20.1%.

#### Sexually transmitted disease

Sexually transmitted diseases (STDs) are a common threat to the health of adolescents ages 15-19 years. Chlamydia is one of the most common STDs. Chlamydia, a bacterial infection, was the most frequently reported communicable disease in the United States with the highest rates reported in females age 15-17 years. Chlamydia is often asymptomatic, thus is more likely to go untreated. It is now a major cause of pelvic inflammatory disease and infertility in women. Screening for chlamydia is important to women's reproductive health. Hawaii has seen the number of reported Chlamydia cases double in the past five years. Chart 5-3 shows the rate for chlamydia in Hawaii for females 15-19 years continues to increase since 1995 15.2 per 1,000 female to 23.8 in 2002.<sup>81</sup>

<sup>80</sup> Data from Family Health Services Division, Title V application for 2006.

<sup>81</sup> Hawaii Title V Block Grant application for 2006.



### Responsible Sexual Behavior

Promoting responsible adolescent sexual behavior targets three protective behaviors that reduce the risk of unintended pregnancy and contracting STDs and HIV infection. These behaviors are particularly important for adolescents who as a group, experience a disproportionate share of STDs and unintended pregnancies when they engage in sexual intercourse.<sup>82</sup> Abstinence from sexual intercourse and use of condoms during sexual intercourse are two of the behaviors monitored through youth surveys.

Table 5-18 summarize the YRBS data for sex related behaviors. In 2003, 33% of Hawaii high school students reported having had sexual intercourse, thus roughly 70% of students are practicing abstinence. Among Hawaii middle school students only 9.8% reported ever having sexual intercourse. The rates for both middle and high school have continued to decrease for this measure. Hawaii rates for all sex-related measures are better than national averages.

<sup>82</sup> U.S. Department of Health and Human Services, *Healthy People 2010, Conference Edition*. Washington, D.C., 2000, p. 25-26

<b>Table 5-18. High &amp; Middle School Students Report on Sex Related Behavior/Experiences, 2003</b>			
<b>Behavioral Description</b>	<b>Hawaii Middle School</b>	<b>Hawaii High School</b>	<b>U.S. High School</b>
Ever had sexual intercourse	9.8	33.3	46.7
Had sex for first time before age 11 or 13	3.2	5.0	7.4
Had sex with 4 or more partners	2.3	8.4	14.4
Drank alcohol or used drugs before sex	2.6	22.4	25.4
Used a condom during past 3 months	4.5	48.9	63.0
Used condom during last sexual intercourse	58.2	—	—
Used birth control pills	0.9	15.5	17.0
Taught about AIDS/HIV in school	58.1	84.6	87.9
Talked to parents/other adults about AIDS/HIV	36.4	41.9	—
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.			

While condom usage is improving for the U.S. teens overall, percentages have been stable in Hawaii over the past four surveys. The use of birth control pills is much lower than condom usage among high school students who are sexually active. While the pills help prevent unintended pregnancy, they do not guard against STDs and HIV infection. Birth control pills appear to be less popular among Hawaii high school students compared to U.S. teens in general. Among Hawaii middle school students having sex, less than 1% are using birth control pills.

As with many other health problems, education awareness, and proper screening can be key to limiting the spread of HIV/AIDS. Fewer Hawaii high school students report receiving AIDS/HIV education in school than the U.S. average. This trend appears to be worsening compared to previous years. Middle school students have had somewhat less exposure to HIV/AIDS education. Even more disturbing is the low percentages of students receiving AIDS/HIV information from parents or other adults.

## **Substance Abuse**

### Tobacco

Cigarette smoking is the single most preventable cause of disease and death in the United States. Smoking results in more deaths each year in the U.S. than AIDS, alcohol, cocaine, heroin, homicide, suicide, motor vehicle crashes, and fires combined. Smoking tobacco causes heart disease, several kinds of cancer, and chronic lung disease.

Smoking among children and adolescents has severe, lifelong consequences for each generation because a large proportion of those who begin smoking as youth will likely continue to smoke for the rest of their lives. The nicotine found in tobacco can create a life long addiction to smoking that is difficult to treat.

Hawaii tobacco prevention efforts have been successful in reducing smoking among youth. The school health surveys: YRBS; Youth Tobacco Survey; and the Student Alcohol, Tobacco and Other Drug Use Survey point to decreases in smoking. YRBS data indicates teen smoking has dropped from 27.9% in 1999 to 18.7% in 2003. The Student Alcohol, Tobacco and Other Drug Use Survey also shows a drop from 24.5% for Hawaii high school students in 2000 to 14.9% in 2003.

Tobacco sales to minors have also dropped substantially since 1996 to the fourth lowest rates in the nation due to aggressive enforcement of law prohibiting the sale of tobacco to minors. Bolstered by Tobacco Settlement funding, smoking prevention efforts are beginning to show results among the state's youth.

### Alcohol

Alcohol is the most popular drug of choice for adolescents in Hawaii, as well as throughout the nation. Commonly recognized as a gateway drug, the continued use of alcohol often leads to illicit drug use. Each year about 100,000 deaths in the U.S. are related to alcohol consumption.<sup>83</sup> Alcohol use has been linked with a substantial proportion of injuries and deaths from traffic accidents, falls, fires, and drowning. It can also be a factor in suicide, homicide, violent behavior, reduced school performance, and high-risk sex. Like tobacco use, adolescent use of alcohol increases the likelihood of continued adult use, potential abuse and associated alcohol-related problems.

Table 5-18 summarizes the YRBS data on alcohol use for adolescents in Hawaii and the U.S. All alcohol use data indicates positive trends for Hawaii students. All but one of the Hawaii student rates for alcohol use are lower than the U.S.. Although the data looks promising Hawaii percentages are still remain unacceptably high. One-third of Hawaii high school students report current alcohol use and nearly 1 in 5 report binge drinking and 25.7% report drinking alcohol before age 13.

<b>Table 5-19. High &amp; Middle School Student Alcohol Use, 2003</b>			
<b>Behavioral Description</b>	<b>Hawaii Middle School</b>	<b>Hawaii High School</b>	<b>U.S. High School</b>
Had first drink of alcohol before age 11	16.9	—	—
Had first drink of alcohol before age 13	—	25.7	27.8
Ever had alcohol	—	62.8	74.9
Current alcohol Use	12.0	32.2	44.9
Binge Drinking	4.6	17.6	28.3
Rode in car driven by someone who drank alcohol	27.0	32.4	30.2
Source: Hawaii High and Middle School Youth Behavioral Risk Surveillance System, 2003.			

The perceived acceptance of alcohol consumption among family, peers, and society influences an adolescent's decision to use or avoid the substance. The perception that alcohol use is socially acceptable

<sup>83</sup> *Ibid.*, p. 26-3

correlates with the fact that more than 80% of youth in the United States consume alcohol before their 21st birthday.<sup>84</sup>

The only measure with higher Hawaii rates was for students who drove in car with someone who had been driving alcohol. The Hawaii high school rate (32.4%) is higher than the U.S. rate (30.2%). Traffic safety data confirms this behavior is a problem. In 2003 Hawaii ranked 17<sup>th</sup> for youth-related driving fatalities by the National Safety Council. According to State Department of Transportation statistics, alcohol was a factor in the traffic deaths of 16 of 21 drivers ages 16 to 20 in 2003. In 2004, 9 of 21 traffic deaths in the same age group were alcohol-related.

## **DIRECT HEALTH CARE AND ENABLING SERVICES**

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### **Financial Access to Health Care and Health-Related Services**

#### Insurance Market

To address rising health care costs, the Hawaii health insurance market has shifted toward managed care in both the private and public sectors. In 2002, 81% of insured Hawaii residents were covered under some form of managed care program, an increase of 31% since 1992.

Hawaii's inflation rate for medical care increased substantially to 8.3% in 2002, up from 1997's low of 1.1%, and twice as high compared to the national rate of 4.7%. This is in part due to the dramatic rise of retail prescription drug costs in Hawaii by 12.5% between 2001 and 2002.

The financing of health care in Hawaii's private sector is dominated by two health plans: the Hawaii Medical Service Association (HMSA, the Blue Cross and Blue Shield plan) which was founded in 1935, and Kaiser which began operating in Hawaii in 1958. In 2002 HMSA insured 32% of the Hawaii market, while Kaiser covered 14%.

Although there was a significant commercial insurance presence at one time, it has dwindled due to the State's isolation, limited consumer market and aggressive competition from HMSA and Kaiser. To address Hawaii's shrinking health insurance market and rising health costs, legislation was passed in 2002 to regulate health insurance plans to assure insurance rate increases are not excessive, yet sufficient to keep insurance companies viable in the long term. Hawaii was one of the last states in the U.S. to pass such legislation.

In 2002, government funded insurance represented 34.5% of residents in Hawaii: 8% Medicare, 14% for Medicaid/QUEST, and 8% covered by TRICARE that provides health care to military families and retirees.

#### MEDICAID

The Hawaii QUEST demonstration project is a Medicaid waiver project administered by the Department of Human Services Med-QUEST Division which began in August 1994. QUEST is an acronym that stands for: Quality Care, Unsuring Universal Access, Encouraging Efficient Utilization, Stabilizing Costs, and Transforming the way health care is provided. QUEST has 2 basic objectives: to expand medical coverage to include

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<sup>84</sup> *Healthy People 2010*, p. 26-31.



populations previously ineligible for Medicaid and to contain costs by shifting fee-for-service to a managed care delivery system. Savings realized from such a shift would be used to expand coverage.

Economic changes and liberal eligibility criteria have led to a tightening of the eligibility within the QUEST program. In 1996 QUEST reduced the 300% Federal Poverty Level requirement to 100% FPL and placed an enrollment cap on the program of 125,000 members, from the high of 160,000 in January 1996. Certain groups are not subject to the cap and can enroll at anytime: pregnant women, children under 19 years of age, foster children and children in subsidized adoptions under age 21, adults whose incomes do not exceed the TANF payment limit, and people who apply within 45 days of losing their employer sponsored coverage due to loss of employment.

As of December 2004 QUEST enrollment was 157,810. Fee for service coverage (for Aged, Blind, and Disabled) was 40,200 for a total of 198,010.

Hawaii implemented the State Children's Health Insurance Program (SCHIP) as an expansion of Medicaid and QUEST. As a result, children under 19 whose family incomes do not exceed 200% FPL are eligible under QUEST. There is no assets test. Children who are legal immigrants arriving after August 1996, refugees and those born in the Marshall Islands and Federated States of Micronesia and Palau were eligible under both SCHIP and QUEST effective July 1, 2000 under a state funded immigrant program.

QUEST allows participants to select medical plans from the 3 current participating providers: HMSA, Kaiser and AlohaCare. As of December 2004 HMSA covered 54.5% of QUEST enrollees, Kaiser 12.9% and AlohaCare 31.4% (another 1.1% are under QUEST FFS). Dental coverage is a full dental benefit for children but limited to emergency and palliative services for adults and was moved from managed care to fee-for-service in October 2001.

Initially, QUEST was to incorporate all existing Medicaid recipients, including the aged, blind, and disabled (ABD) population through Phase II of the project in 1997. The State currently has an application in with the Centers for Medicare and Medicaid Services (CMS) to move the ABD population to managed care. The anticipated date for enrollment into managed care plans is July 1, 2007.

Hawaii's waiver program expired on 30 June 2005. DHS was given a one-month extension while the new waiver application is being reviewed. The application for renewal and expansion of the current Medicaid QUEST waiver program was submitted with extensive input from the community and providers. All current QUEST eligibility groups would continue and, depending on cost projections and available resources DHS plans to expand services by:

- Extending children's coverage under the State Children's Health Insurance Program (CHIP) from the current family income level of 200% of the federal poverty level (FPL) to at least 225% FPL.
- Eliminating a requirement that children must be enrolled in QUEST to continue in QUEST-Net (a program developed mainly for people who no longer qualify for QUEST with income levels up to 300% FPL). This ensures that all children from families with incomes at or below 300% FPL have access to the full QUEST benefit package with no cost to families up to at least 225% FPL and with a reasonable premium for families with income up to 300% FPL.

- Providing QUEST coverage for all children in the state's child welfare system. The few who are not otherwise eligible will be covered by a state-only benefit. These children will receive additional services through the QUEST plans, including direct access to a specially trained health care provider to identify and handle child abuse and a complete examination and assessment within an established number of days of entering the system.
- Piloting a Health Insurance Flexibility and Accountability (HIFA) program for employed individuals leaving Temporary Assistance for Needy Families Program (TANF). Parents will be offered COBRA-like premium assistance for an additional year after their mandatory Medicaid coverage ends.

The goal is to increase access to high quality health care, reduce the number of uninsured children, and preserve Hawaii's generous federal matching funds at sustainable levels.

#### Hawaii Uninsured Project

Efforts to achieve universal coverage continue through other projects. The DOH has partnered with the HMSA Foundation to address the issue of the uninsured. Hawaii's Uninsured Project conducted a conference this past year to identify the issues surrounding the uninsured and to develop appropriate strategies.

In January 2004 Hawaii was awarded \$3.2 million in RWJ Foundation funds for a three year project to implement universal health care coverage. Work continued this year in partnership with the University of Hawaii, Social Science Research Institute and Hawaii Institute of Public Affairs to define the uninsured, frame their issues, explore solutions with stakeholders, and conduct economic modeling of the various options.

The Hawaii Uninsured Project published *On Common Ground* in 2002 which outlined the concerns around the uninsured: who are they and what are their issues. In January 2005, HUP published *Pathways to Coverage* which outlined strategies endorsed by a broad cross-section of stakeholders to expand coverage further. The Department of Human Services, an active participant in the HUP discussions, has since shortened its application form and has implemented passive renewal which has resulted in increased enrollment. DHS has also extended QUEST coverage to pregnant immigrant women.

#### State Child Health Insurance Program

The State Children's Health Insurance Program (SCHIP), enacted in August, 1997, provided new incentives for states to extend public health insurance coverage to low-income uninsured children. The federal government offered states a higher federal match and greater flexibility to design their programs than they enjoyed under Medicaid. Hawaii uses Tobacco Settlement revenues to fund the State match for SCHIP.

The Department of Human Services (DHS) is the lead agency in Hawaii for the State Child Health Insurance Program (SCHIP). Hawaii's SCHIP program, a Medicaid expansion, began on July 1, 2000, and covers all children under 19 years of age with family incomes up to 200% of the Federal Poverty Level (FPL) for Hawaii. There is no waiting period for SCHIP eligibility. As of December 2004, 13,719 children were enrolled in SCHIP.

Effective July 1, 2000, legal immigrants, refugees, and those born in the Marshall Islands, Federated States of Micronesia and Palau were eligible for QUEST-like health coverage under a state-funded immigrant children's program which has the same eligibility requirements as QUEST. As of December 2004, 2,855 immigrant children were enrolled.

### Insurance Coverage

Medical insurance coverage is a strong predictor of access to care. Among the uninsured in the U.S., children are the largest group.<sup>85</sup> Children with no medical insurance are less likely to secure care for routine/preventive care or for illness, have a regular source of care, and experience a lower overall standard of care than insured children. Without access to primary care, many are forced into the most expensive ambulatory care setting-hospital emergency departments to obtain routine services.

The percentage of children covered by private health insurance in Hawaii is higher than for the U.S. in general. This is due largely to the passage of the Hawaii Prepaid Health Act in 1974. Since 1988, all private insurance policies which provide coverage for sick child care are mandated to provide well child supervision coverage up to the age of 6 years.<sup>86</sup>

Although Hawaii residents may have the best opportunity to obtain health insurance, the Department of Health annual household health survey showed that in 2003 5.2% of all Hawaii residents did not have insurance coverage. Of this 2.9% of children 0-17 years did not have health insurance (over 8,000 children).<sup>87</sup> The county with the highest proportion of children uninsured is Hawaii county. The lowest percentage is Honolulu, despite the high concentration of children in the county.

<b>Table 5-20 Uninsured Children and Percentage of Child Population Age Birth-17 years by County, 2003</b>					
		<b>COUNTY</b>			
	<b>State</b>	<b>Honolulu</b>	<b>HAWAII</b>	<b>KAUAI</b>	<b>Maui</b>
# of uninsured children	8,388	4,570	1,951	524	1,343
Child population	291,109	205,635	37,892	14,725	32,857
% of uninsured children	2.9%%	2.2%	5.1%	3.6%	4.1%
Source: Hawaii State Department of Health, Office of Health Status Monitoring, <i>Hawaii Health Survey 2003</i> .					

Although many Hawaii residents have medical insurance, they could be “underinsured,” where health plans may not cover needed services or require co-payments which pose a financial burden on families. The data appears to show insurance coverage is relatively high for children. But out-of-pocket financial payments by families for health care services may pose a barrier to accessing care. If families lack the means to pay for care they will likely be low users of preventive services and tend to delay seeking care until conditions require higher levels of service, more costly interventions, or more intensive treatment than if they had entered the care system at an earlier stage.

### **Health Resources**

Another factor affecting access is the availability of health care providers and facilities. Overall Hawaii has an adequate supply of providers, facilities and equipment. It is their distribution that presents the problems,

<sup>85</sup> John B. Kotch, ed. *Maternal and Child Health: Programs, Problems and Policy in Public Health*. Gaithersburg, Maryland: Aspen Publication, 1997 p. 125.

<sup>86</sup> Family Health Services Division, Hawaii Department of Health, Maternal and Child Health Block Grant Application Fiscal Year 2006 Application.

<sup>87</sup> Hawaii State Department of Health, Office of Health Status Monitoring, *Hawaii Health Survey*, 1999.

both the location of their practice and the type of insurance or payment they accept. There are significant gaps in the supply of providers in rural areas, particularly on the neighbor islands, and in low-income urban neighborhoods in Honolulu that often include many minority groups.

For certain services like dental care, the centralized location of dental providers and their reluctance to accept publicly insured clients is a serious issue since most dental health services in Hawaii are delivered through private dental offices. The state health department and a few community health centers provide limited dental services to under-served groups.

### **Providers**

There were 3,021 licensed physicians in Hawaii in 2002, of which 96% were in active practice and providing patient care. Among the states, Hawaii ranked 9<sup>th</sup> in physician to population ratio. Between 1990 and 2002, the number of physicians in Hawaii grew from 2.1 to 2.6 per 1,000 population.

Primary care physicians provide a full range of basic health services to patients and include general practitioners, pediatricians, obstetrician/gynecologists, family practice physicians, and internists. Most HMOs require each enrollee to select a PCP who provides or arranges for appropriate care. Of 3,092 active physicians in Hawaii in 2002, 53.4% qualify as PCPs.

Based on 2000 records, 976 licensed dentists practice in the state or 0.9 dentists per 1,000 residents, compared to 0.6 per 1,000 for the U.S. As expected, the highest dentist to population ratio is in Honolulu (0.9) and the lowest on Maui (0.6). After reaching a high of 0.9 in 1993, the number of dentists in Hawaii is currently in decline.

### **Shortage Designation Areas**

Areas with a shortage of health professionals have been identified in the state through a system of designations for underserved areas or populations-at-risk by the Federal Bureau of Health Professions. Health professional shortage designation areas (HPSA) are divided into three major categories according to the type of health professional shortage: primary care, dental and mental health.

Communities may also be designated as Medically Under-Served Areas (MUA) and Medically Under-Served Populations (MUP). Medically under-served area/populations are considered to have a shortage of health services (versus *professionals* in the HPSA) and where a high proportion of the population is below 100% of poverty, is elderly, exhibits poor health outcomes and has a low ratio of primary care physicians. The designations are important to channel substantial federal resources and grants to under-served communities. Table 39 lists all the health professional shortage designation areas (HPSA) and medically under-served areas/populations in Hawaii.

Table 5-21. Federal Designations of Under-Served Areas, June 2005				
Area	MUA or MUP	Primary Care HPSA	Dental HPSA	Mental Health HPSA
(by census tract)	Designations			
<b>Maui County</b>				
Hana/ Haiku (301 – 302)	MUP	X	X	XX (301)
Maui (303 – 315)	MUP		XX	
Lanai Island (316)	MUP	XX		
Moloka'i Island (317 – 319)	MUA	X	XX	X
<b>Hawaii County</b>				
Hilo (201 – 209)	MUP		XX	
Puna (210 – 211)	MUP	X (211)	XX	X
Ka'u (212)	MUP	X	XX	X
Hamakua (219 – 221)	MUP	X	XX	XX
Kona (213 – 216)	MUP		XX	
Kohala (217 – 218)	MUP		XX	XX
<b>City &amp; County of Honolulu</b>				
Kalihi Palama (51 – 56)	MUP	XX	XX	X
Kalihi Valley (61 – 66)	MUA	XX	XX	X
Ko'olauloa	MUA			
Waikiki (18 – 20.02)	MUP			
Waimanalo (113)	MUP			
Wai'anae (96 – 98)	MUA			
<b>Kauai County</b>				
Kauai and Niihau island	MUP	XX	XX	X (408-409)
Source: Primary Care Office, Hawaii Department of Health, June 2005.				

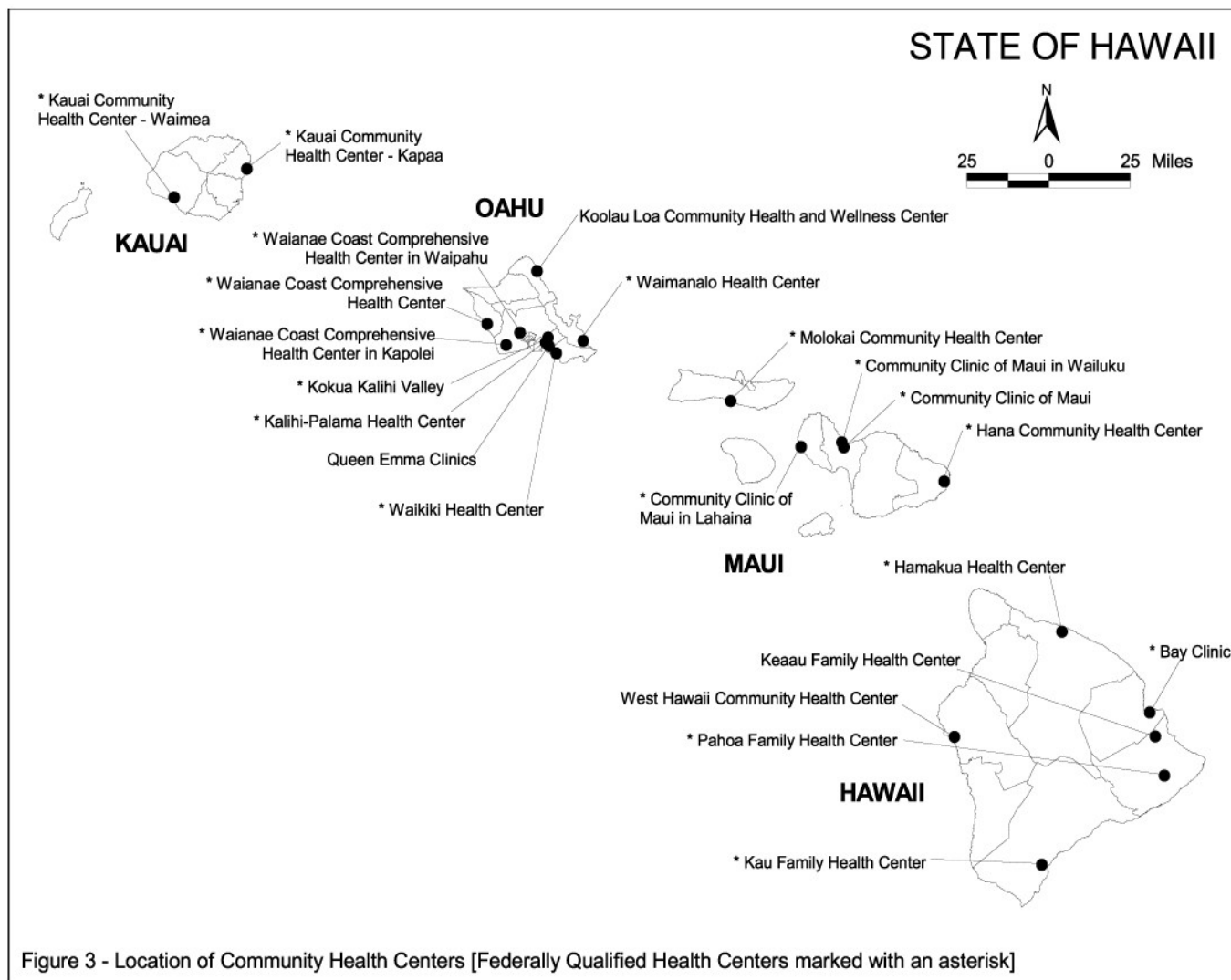
MUA or MUP - Medically Underserved Area or Population  
HPSA - Health Professional Shortage Area

X - Approved as an Area designation  
XX - Approved as a Low-Income Population designation

The Primary Care Office which is part of the Family Health Services Division collects data on shortage areas, updates designations and may apply for new designations.

### Facilities

There are 14 community health centers (CHC) in Hawaii located in the under-served areas in the state. Six of these CHCs have multiple satellite sites. CHCs serve 80,000 people every year. The majority of CHC clients are low-income. Figure 3 shows the location of the health centers and major satellite sites.



There are 24 civilian acute care hospitals in the state. Tripler Army Medical Center serves the Hawaii military population. Of the 25 hospitals 14 are considered major community hospitals. Each of the major islands has one hospital with the exception of Niihau. Twelve of the hospitals are located on the Oahu. Twelve of the former state hospitals are now organized under the Hawaii Health Systems Corporation.

### Geographic Access to Health Care & Health-related Services

The network of community health centers in rural and urban under-served areas helps alleviate access issues for children to primary and preventive services. Still major gaps exist, specifically access to dental care. The majority of tertiary health care facilities and specialty and sub-specialty services are located on Oahu with the greatest concentration in the primary urban center of Honolulu. Consequently, neighbor island and rural Oahu residents must travel to Honolulu for these services. This is a financial burden for neighbor island residents since the round-trip airfare is about \$200.

To address some of the access problems to tertiary care and specialty care for the neighbor islands, a new health care network, the State of Hawaii Telehealth Access Network (STAN) was created in 1998 to foster telehealth and telemedicine in Hawaii. STAN links health care providers, educational institutions and related agencies, allowing communication for clinical, financial/management, and educational services. Through the use of electronic video communication, health information and services can be delivered despite long distances to care providers. STAN now links many of the acute care hospitals, Shriners Hospital for Children, the University of Hawaii, and the community health centers.

### **Access to Primary Care/Barriers to Care: Utilization of Services**

Consumer use of health resources and providers indicate accessibility of the service system. Various measures are reviewed to determine the adequacy of primary and preventive services for children in Hawaii.

#### Immunization

The level of immunizations received by children is an important measure of the delivery of direct services to children. The immunization schedule serves as the basis for routine health maintenance services recommended for preschool children. As of November 1, 1999 all children should be receiving 12-16 doses of vaccine by 2 years of age to be protected against 10 vaccine-preventable childhood diseases.

Vaccines prevent the debilitating and in some cases, fatal effects, of infectious diseases like polio, measles, pertussis, mumps and rubella. In 2004 according to the results of the National Immunization Survey, 82.9% of Hawaii children 10-35 months of age received the full immunization schedule of vaccines, meeting the Healthy People 2010 objective of 80% for the first time.<sup>88</sup>

#### Primary Care

According to the results of the 2000 Child Health Survey most of Hawaii children have a regular source of care and routinely access preventive services with little difficulty. Of children age 5-11 years 97% have a regular source of medical care either a doctor or clinic. The lowest percentage of children with a regular source of care was Kauai with 94.1% and the high was on Oahu with 97.8%. Nearly 85% of children had a check-up or routine physical exam in the past year. Only 5.1% of children had difficulty getting health care in the past year. While the number of responses was small for this question, the most common reason for not accessing care was because of cost.

Dental visits in the past year by children age 5-11 years was slightly less than reported visits to doctors (90.7% compared to 97%). Again while the results are not directly comparable, 1995 Child Health Survey indicated 75.8% Hawaii families reported their children visited the dentist within the last year. In 2000 only 1.6% children never visited the dentist compared to 17% of families with children in 1995.

In 2000, 8.2% of children had difficulty getting dental care. The primary reason for difficulty securing care was the cost. In 1995 26.9% had difficulty accessing dental care for their children. The primary reason for the difficulty was financial (58.6%). Access to dental care for young children in Hawaii may be improving somewhat.

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<sup>88</sup> Full immunization schedule is 4:3:1:3 series includes 4 doses of DPT (diphtheria-pertussis-tetanus), 3 does of OPV (oral polio vaccine) and 1 does of MMR (measles-mumps-rubella) and 3 doses of Hib (Haemophilus influenzae type b vaccine).

### Medicaid

Poverty is one of the best predictors of child health status.<sup>89</sup> Childhood poverty has a strong association with poor child health due to the economic disadvantages and stressors experienced by these families. Medical care can mitigate some of the adverse effects of poverty and other risk factors associated with this vulnerable population. Recognizing the effectiveness of preventive primary care for children, Congress enacted the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) to assure low-income children have access to a comprehensive package of preventive care. Through implementation of the EPSDT program, child health could be vastly improved. Unfortunately, since its inception the program's success in screening and treating eligible children has not met expectations.

Utilization rates for EPSDT are reported annually. The percentage of potentially Medicaid eligible children in Hawaii who have received a service paid by the Medicaid program has steadily improved since 1997 (54.7%) until 2002 (79.2%).<sup>90</sup> The number of Medicaid eligible includes both those children enrolled in Medicaid and state estimates for children who are eligible for Medicaid, but not currently enrolled.

Other problems with EPSDT concern the quality of visits. Exams may occur without completed lead testing, developmental assessments, and vision/hearing screening.

### Family Support

Assuring parenting support and information is made available to all families and children was identified as a state priority need. FHSD funds a free, statewide telephone parent line that provides support, encouragement, informal counseling, information, and referral to over 4,000 callers a year. The usage demonstrates a substantial interest and need for these services. Due to limited funds, the parent line is in operation for only limited hours during the week. Fifty percent (50%) of existing callers are considered at high risk for family disintegration, child abuse and neglect, and children's social, emotional, or behavioral problems. A majority of the calls involve children aged birth to five. Usually, these families have not accessed any other social service; and this phone call is their initial entry to service providers and can be a first line of prevention for child abuse, neglect, and early referral to ongoing services.

Results from the 2000 Child Health Survey indicate there is a need for more information on child health issues and services available in the community for families. Among the 4 quality of service measures asked about primary care providers for children in Hawaii, the only measure which providers rated poorly was providing parents with information about educational and other services for their children.

## **Cultural Acceptability of Health Care & Health-Related Services**

With over one million residents, there is no one ethnic group in Hawaii that comprises a majority. Caucasians, Japanese, Filipino, and Native Hawaiians are the four largest ethnic groups, and together make up 73% of the population. The remaining residents are Chinese, Korean, Vietnamese, Samoan, Pacific Islanders, Black, Laotian, American Indian, Eskimo, Aleut, or Tongan.

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<sup>89</sup> PG Szilagyi and EL Schor, 1998. "The Health of Children," *Health Services Research*, 33(4):1001-1035.

<sup>90</sup> Family Health Services Division, Hawaii Department of Health, Maternal and Child Health Service Block Grant Program Annual Report FY 2004 and Application FY 2006..



Language is sometimes a barrier, particularly for recent immigrants. Two growing immigrant populations especially on the neighbor islands are the Micronesians and Mexicans drawn to the islands to work in the agricultural industry. Hawaii has many ethnic groups whose first language is not English and who have limited English proficiency including Filipinos, Vietnamese, Laotian, Japanese and Chinese. Culture may also influence an individual's definition of health and illness, belief about disease causation, behavior during illness, seeking of medical help, expectations about treatment, compliance with following prescribed procedures and treatments, and proper standard of behavior in transactions with a provider. Approaches to cultural diversity by Department of Health and community programs include: hiring of ethnically/culturally-diverse staff with experience in working with people in various cultures; inviting participants from diverse populations to review the appropriateness of programs, informational materials, and interventions; and education/training to develop cultural competence and awareness. Efforts are also made to provide informational materials in various languages.

Five Native Hawaiian Health Systems were established by Congress in the Native Hawaiian Health Improvement Act for 1988 to address the poor health status of this population. The primary focus of these systems is preventive health. Services are delivered with a strong cultural approach and include outreach, health screening, health education and counseling, case management, and transportation. A majority of the activities have focused on chronic diseases, which are major causes of premature deaths among Native Hawaiians. However, activities that target the MCH population are increasing and have included hearing screening for children, pregnancy counseling, and nutrition services. The five Native Hawaiian Health Systems are: Ke Ola Mamo (Oahu); Hoola Lahui Hawaii (Kauai and Niihau); Na Puuwai (Molokai and Lanai); Hui No Ke Ola Pono (Maui); and Hui Malama Ola Na OIwi (Hawaii Island).

### **Impact of Shift in Medicaid Coverage on Financial Barriers to Care & Services Delivered by State Public Health Agencies**

With increased availability of Medicaid insurance, the number of uninsured children has decreased and more children are accessing needed medical services. However, there are still an estimated 8,000 children without insurance coverage.

The State Department of Health and Department of Human Services along with many community partners have been able to focus efforts on outreach to potentially Medicaid-eligible children and streamlining the enrollment process for public insurance. Stakeholders met regularly to plan for the implementation of Hawaii's SCHIP program which began on July 1, 2000. Children under age 19, with family income up to 200% of the Federal Poverty Level can qualify for SCHIP coverage with no asset limits. Benefits are the same as Medicaid/QUEST for children, with health coverage provided through QUEST managed care plans. As a Medicaid expansion program, all Medicaid eligibility requirements are applicable, and all Medicaid covered services, including EPSDT, will be provided.

These efforts have placed increased emphasis on outreach and enrollment of Medicaid-eligible, as well as SCHIP-eligible children. Hawaii's Covering Kids Initiative and the Medicaid agency have sponsored statewide outreach and enrollment training sessions for all stakeholders. These two agencies have also established a

statewide hotline to provide information and application forms for Medicaid-eligible children. The Covering Kids Initiative has also sponsored media and networking activities and special outreach and enrollment projects. The Title V program has been an active participant in all of these activities and has assured that all Title V stakeholders are informed of and can benefit from these efforts. In addition, all of the Title V program's purchase-of-service contracts require that uninsured Medicaid-eligible children be referred for Medicaid assistance.

A medical assistance program for immigrant children was implemented July 1, 2000. The program was established by the Legislature, with 100% state funding. Age and income eligibility is similar to that of SCHIP. The program will provide medical assistance for legal immigrants who arrived after August 22, 1996, refugees, and non-immigrants from the Trust Territories of the Pacific Islands who are citizens of the Marshall Islands, Federated States of Micronesia, or Palau. Benefits will be the same as that for Medicaid/QUEST children.

A "safety net" will still be needed for families who are not eligible for public medical assistance because of non-legal immigrant status or families who have income above eligibility limits but cannot afford medical services.

The low EPSDT rates for children enrolled in Medicaid need improvement especially for young children and adolescents. Capitation, additional processing efforts, and difficult consumer relations, have discouraged many private care providers from accepting Medicaid enrollees as patients and may be limiting access to care. Further assessment and analysis of the problem needs to be conducted. Higher utilization of primary and preventive services must be encouraged once insurance is secured.

### **Impact of the Move to Managed Care on Service Delivery**

In the 1990s the trend toward managed care has helped contain the spiraling cost of health services for families, thus, making care more accessible. Hawaii's inflation rate for medical care was 1.1% in 1997, the lowest rate since the advent of Medicaid and Medicare in the 1960s and well below the national rate. However, in 2002 the inflation rate for medical care is now double the national average

It is expected that case management and coordination have improved and benefits have increased. ESPDT rates and HEDIS measures for Hawaii's major HMOs indicate primary care for infants and toddlers are fairly good, but could be improved. Primary care for children and adolescents still needs serious attention.

The move toward managed care has meant Hawaii's major insurance carriers are required or have voluntarily adopted standardized quality of care measures to varying degrees. Review of the measures and data should facilitate improvement toward delivery of services and identify emerging health issues.

The major problem for the state Medicaid program has been finding an adequate number of providers to take Medicaid clients for medical and dental services. While the Medicaid benefit packages are fairly comprehensive, the provider network has been declining in recent years making actual access to care severely limited in many areas of the state. Providers often cannot afford to take Medicaid clients due to limited reimbursement for services, which results in loss of income. Additional paperwork also poses hardships for providers. Problems with missed appointments may also discourage providers from accepting or expanding the number of Medicaid clients accepted.

**Linkages that promote services & referrals between primary, secondary (specialized) & tertiary (highly specialized) levels of care**

Referral systems are in place within provider networks of managed care organizations. Some managed care organizations have care coordinators to arrange services and referrals, especially for patients with complex needs. Referral systems are in place within facilities providing different levels of services (e.g. medical centers that provide both outpatient and inpatient services).

The tertiary pediatric hospital Kapiolani Medical Center for Women and Children (KMCWC) on Oahu maintains a specialized team to transport critically ill infants and children from Neighbor Islands and from other areas of Oahu to KMCWC, and from KMCWC to mainland hospitals which provide specialized care not available in Hawaii. The team includes neonatologists/pediatricians, nurses, and respiratory therapists.

**Relationship of Title V with others in the state who address inadequate, or poorly distributed health care resources**

FHSD, the Title V agency, partners with numerous community stakeholders to assure children have access to primary care. These stakeholders include other Divisions within the Department of Health (Dental Health, Health Promotion, Public Health Nursing, Emergency Services) as well as other government departments (Human Services responsible for administration of Medicaid, Department of Health, Judiciary). FHSD also partners with purchase of service contractors to provide an array of direct and enabling services to ensure vulnerable populations in the state have access to health services.

*Services***Women, Infant and Children**

Hawai'i's Women, Infants and Children (WIC) program served a monthly average of 16,986 children up to age 5 in FFY 2004 by providing food, nutrition counseling and referrals. WIC collaborates with the primary care/community health centers to provide WIC services, resulting in greater integrated health service provision to low-income children. Research published in 2004 compared the prevalence of overweight among WIC children 2-4 years old and found ethnic differences (ranging from 7.3% of blacks to 27.0% of Samoans). The 2005 WIC conference focused on feeding relationships in an effort to address childhood obesity. WIC collaborates with other programs to provide more coordinated care in the community to include childhood immunizations, breastfeeding, oral health, and referrals to health and social services. Medicaid now is first payor for special formula and medical foods for WIC children. Recommendations in a Unit Cost/Best Practices report is expected by October 2005 to streamline services while containing costs and maintaining satisfaction among staff and participants as well as clinical outcomes.

**Family Planning Services**

Family Planning Services Section (FPSS) with contracts 16 clinics and 19 private physicians to provide subsidized family planning services through a network of 50 clinics statewide. Eighty-five percent of the funding for these services was provided by Title X funds and 10% by State funds.

### **Early and Periodic Screening Diagnosis and Treatment**

Family Health Services Division (FHSD) continues to collaborate with other agencies to increase enrollment of all eligible children into QUEST and monitor utilization rates. A recent agreement between the Medicaid Agency, the Department of Health, Environmental Management Program, and Maternal and Child Health Branch resulted in a coordinated statewide response to children with elevated lead levels. The EPSDT Coordinators of the various managed care plans are also partners in this endeavor.

### **Healthy Start Program**

The Healthy Start Program reaches families experiencing multiple stresses when a child is born. This community based program helps strengthen family functioning and promote child development. Program components include daily chart screening at targeted hospitals to identify high risk families utilizing a nationally recognized screening tool. Voluntary paraprofessional home visitation is offered to qualifying families. These home visits focus on improving parent-child interaction and bonding. Services are contracted through private agencies. FHSD routinely evaluates the contracts to assure program integrity.

## **POPULATION-BASED SERVICES**

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### **Hawaii Immunization Coalition**

Hawaii Immunization Coalition is a statewide, community-based coalition of public and private agencies that ensure all of Hawaii's children are appropriately immunized against vaccine-preventable diseases. Activities include dispersing current information and resources, distributing educational materials to the community, under taking statewide vaccination campaigns, and developing policies that affect immunizations. Training for health professionals and organizations on the latest immunization information and issues is an important function. The Coalition also works to address access issues and barriers to care for at-risk populations. The Coalition is also considering the feasibility of developing an immunization registry to secure more accurate and timely data regarding immunization levels for children in the state.

### **Children's Trust Fund**

Hawaii Children's Trust Fund (HCTF) established by the Legislature (Chapter 350B, Hawaii Revised Statutes) is a public-private partnership committed to establishing a permanent endowment fund to provide grants towards efforts to strengthen families, prevent child abuse and neglect, and promote healthy child development. The Coalition consists of over 90 members, which include parents, public and private agencies, and other groups with an interest in child abuse prevention. The Advisory Committee is comprised of public and private sector representation.

### **Lead Poisoning Surveillance**

The Lead Poisoning Surveillance Grant Program is funded by the Centers for Disease Control (CDC) and collaborates with the EPSDT Advisory Committee and the American Academy of Pediatrics to conduct lead screening. About 8,000 children are screened annually in Hawaii, the majority of whom are covered by QUEST/Medicaid Health Plans. However, not all eligible children are screened; therefore, collaboration to address this is ongoing. Follow-up on elevated lead levels occurs in a partnership between the QUEST

Managed Care Plans, the Medicaid Agency, and the Department of Health. Title V personnel also keep the Medicaid Agency and the Managed Care Plans abreast of current information on lead poisoning issues.

### **The Parent Line**

The Parent Line is a free, statewide telephone line that provides support, encouragement, informal counseling, information, and referral to over 4,000 callers a year. Fifty percent (50%) of existing callers are considered at high risk for family disintegration, child abuse and neglect, and child social, emotional, or behavioral problems. A majority of the calls involve children aged birth to five. The callers receive information and support about a wide variety of child behaviors, child development issues, community resources, and solid parenting skill building. Usually, these families have not accessed any other services; and this phone call is their initial entry to service providers and can be a first line of prevention for child abuse, neglect, and early referral to ongoing services. The Parent Line also disseminates statewide: 10,000 *Keiki 'O Hawaii* early childhood newsletters to first-time parents, 3,000 *Keiki 'O Hawaii* newsletters to health professionals such as Public Health nurses and Healthy Start workers, 45,000 *Teddy Bear Post* parent education resource newsletters to parents of children age 3-5 years, and 20,000 *Keiki 'O Hawaii Resource Directories* to parents of young children.

### **Healthy Child Care America Grant**

Healthy Child Care Hawaii (HCCH) is a collaborative project of FHSD/CSHNB, University of Hawaii Department of Pediatrics, American Academy of Pediatrics-Hawaii Chapter, and Department of Human Services. HCCH promotes the health and safety of young children in child care, based on the national health and safety performance standards in child care settings. HCCH recruits, trains, and connects health consultants to child care programs; trains pediatric residents in providing presentations on health topics for families and staff at child care sites; provides education/information at conferences; and other activities. HCCH was previously funded by the MCH Bureau. DHS began providing funding in June 2002, and is now providing the only funding support for HCCH for FY2006. CSHNB provides in-kind support.

### **The State's coordination with other agencies & organizations in the provision of these services**

FHSD works with both public and private agencies/stakeholders to promote MCH priorities and objectives. FHSD provides data and analysis on health issues, facilitates collaboration among stakeholders, provides policy analysis, administers contracts for services, and secures funding through the development of grants.

The location of the Primary Care Office (PCO) in FHSD provides the opportunity to integrate MCH with primary care activities. New ways to partner FHSD and the primary care community are being identified to promote greater access to care.

### **Assess and describe the State's involvement in the direct management of these services & programs**

A few of FHSD's child programs are administered directly, but most are administered through the state purchase of service system (POS). The POS contracted services are provided by private agencies geographically located throughout the state. Contracts clearly outline services for uninsured children from birth to 18 years based on EPSDT guidelines.

## **Funding mechanisms for these services**

Many programs in FHSD are a product of existing funding streams which are largely categorical and issue oriented. Given the state's economic difficulties, there is greater dependence on federal funding for new programs and initiatives. However, federal funding continues to be largely categorical and generally not focused on developing infrastructure capacity and comprehensive systems of care.

## **INFRASTRUCTURE-BUILDING SERVICES**

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### **Assess & describe what is needed at the State level to promote comprehensive systems of services**

To promote comprehensive systems of services there should be an effective public health infrastructure in place. Nationally, the Institute of Medicine (IOM) identified several core public health functions, which are essential to achieving primary prevention: assessment, policy development, and assurance. FHSD is committed to developing its capacity in the core public health functions and identified improvement in this area as a state priority need. FHSD hopes to move from a service delivery organization to one that provides the infrastructure to support the development of systems of care at the state and community level.

The Division is also moving to increase its epidemiological support to strengthen its assessment and monitoring capacity. See narrative in Chapter 3 regarding FHSD efforts to build core public health capacity.

### **CompCare**

TA has been secured as part of HRSA's CompCare Initiative to begin defining Hawaii's system of care for children. Based on a conference and study of over 50 major child health agencies key findings were identified:

- No common agreement on what constitutes the service system
- Little agreement on the priority needs, gaps in the service system
- Funding sources vary widely, are often categorical, and duration/sustainability of funding is unclear
- Programs differ widely on methods to monitor and evaluate program effectiveness
- Few programs have formal transition mechanisms in place pointing to gaps in the service system
- Programs are often topic-focused versus child-focused

Therefore, system improvements need to address the comprehensive system of care for children of all ages.

### **Early Childhood Comprehensive Systems**

The Early Childhood Comprehensive Systems grant is designed to coordinate state efforts to develop a system of care to support the physical, social, emotional and learning environments for young children. A 2-year planning process resulted in a 3-year implementation plan scheduled to begin at the end of 2005.

### **Healthy Hawaii Initiative**

The 2000 Legislature authorized the Department of Health's Healthy Hawaii Initiative (HHI). This Initiative is a major, statewide effort to encourage healthy lifestyles and environments with emphasis on children and adolescents in relation to 3 critical areas: poor nutrition, lack of physical activity, and tobacco use that

contribute significantly to the development of chronic disease. HHI is supported by a portion of the Tobacco Settlement Funds awarded to the state through a class action suit brought against the tobacco industry.

HHI takes a multifaceted approach to improving health in the state by focusing on: a Coordinated School Health Program, community programs and projects, and public and professional education.

### **Coordinated School Health Program**

Recognizing the critical role of schools in the development of healthy children, the Department of Health and Department of Education have formed a partnership to facilitate improvements in school health. This past year, the DOH and DOE sponsored health conferences, workshops, and university courses for DOE faculty and administrators to help students make more informed health choices. Administrators for both the DOE and DOH meet regularly throughout the year to improve the basic infrastructure needed for healthier school environments. Discussions focus on strengthening decision-making, communication, and developing expertise and resources around school health.

### **Assess from the State perspective how local delivery systems meet the population's health needs**

Hawaii, because of the state's high rate of insured children, fares well compared to the rest of the U.S. in meeting the health care needs of children. An obvious area for improvement relates to assurance of dental health care both preventive and remedial. Hawaii is one of the last states to fluoridate its water. While Medicaid covers child dental health utilization rates are extremely low.

Services for children experiencing mental health disability problems are still a concern for Hawaii. The state is still under a court-decree for failure to provide appropriate services to address these critical health needs for children.

### **Assess existing system and collaborative efforts, primary & preventive care for children**

There are many examples of collaborative efforts within the state system of care primarily focusing on issues or specific target populations. However, there has not been a comprehensive review of the system of care for children in Hawaii.

#### *Services/Programs*

### **Good Beginnings Alliance**

Good Beginnings Alliance (GBA) is the state's public/private partnership to create a coordinated early childhood education care system. The Alliance provides technical assistance and recommendations for policy development and funding to partners at the local and state level to support activities that will lead to improved outcomes for young children from birth through the first five years of life. A major focus has been the assurance of quality child care services for children under the age of five. GBA has created a master plan for early childhood systems and works at the local level through four County Councils and at the state level through an Interdepartmental Council consisting of the five State Cabinet members and the Office of the Governor. The master plan aims to increase community engagement in early childhood issues, assess needs, coordinate data collection, create system financing strategies, attract private funding, and create a financial aid system to access early childhood services.

### **Hawaii Child Death Review Council**

Death in childhood is often preventable yet the exact causes and circumstances surrounding death, which may generate important data and strategies, are incomplete when simply examining vital statistics. To address this problem, Hawaii's Child Death Review Council, a voluntary public-private partnership, was established in 1996 to develop a comprehensive, statewide, multidisciplinary child death review system to reduce preventable child deaths from birth to age 18. In 1997, Act 369 of the Hawaii Revised Statutes authorized the Department of Health to conduct child death reviews through standardized procedures to identify causes of death and recommend policies and strategies to prevent future deaths. Currently, the Council is finalizing a report based on the review of cases for years 1996-2000.

### **School Health Advisory Council**

The School Health Advisory Council (SHAC) was developed to be an advisory committee to the Superintendent of Education and Director of Health for policies relating to school health and child and adolescent health. Efforts are being taken to re-evaluate the structure and functions of SHAC with its recommendations of early identification/risk assessment, K-12 health education curricula, and comprehensive school health programming as key strategies.

### **Hawaii Teen Pregnancy, Parenting and Prevention Council**

The Hawaii Teen Pregnancy, Parenting and Prevention Council (HTPPPC) has continued since 1975 to meet quarterly as a network of public and private agencies and individuals dedicated to improving public information and interagency communication around issues of teen pregnancy prevention and parenting. HTPPPC activities incorporate use of *Laulima In Action* (the State Adolescent Health Plan) and Healthy People 2010 guidelines when planning state and community-based efforts. HTPPPC is coordinated through the Healthy Mothers, Healthy Babies Coalition, which along with the Teen Intervention Program at the Kapiolani Medical Center, is initiating "*Live Your Life Before You Make One*", a school-based teen pregnancy prevention campaign in collaboration with public and private agency partners.

### **Keiki Injury Prevention Coalition**

Keiki Injury Prevention Coalition (KIPC) is an organization of over 60 private and public partners in the community, including KIPC chapters on Kauai, Maui, and Hawaii. FHSD staff continues to provide leadership and participate in statewide activities to address issues related to childhood injury prevention. KIPC supports data analysis and assessment of injury incidence and causation, networking with agencies and community organizations to effect legislation, policy, and educational measures to reduce both unintentional and intentional injuries. Establishing car safety restraint training and checkup sites at community health centers, sharing pedestrian safety data to increase awareness and link educational resources to targeted schools, and collaborating with the Department of Education to provide a comprehensive integrated injury prevention curriculum to school-aged children are examples of on-going projects. KIPC is also the Hawaii Safe Kid's affiliate and participates with the Department of Transportation in the Safe Communities Initiative.



**Standards, guidelines, monitoring, evaluation, quality improvement**

Through the Purchase of Service system, FHSD is able to monitor and evaluate services provided throughout the community. Performance measures are identified that focus on both the service delivery and client outcomes. Reporting on the measures is required as part of the contracted services. Many FHSD programs utilize customer satisfaction surveys for evaluation of services.

FHSD also periodically conducts surveys of residents to gauge community perceptions of health needs, access issues and quality of care. The 2000 Child Health Survey is the most recent example.

Standardized quality of care measures are used by Hawaii's largest public and private insurance providers. Thus data is available regarding the vast majority of health consumers on customer satisfaction and health outcomes. The measures and data will be reviewed and analyzed to assess the quality of care received in the state.



## APPENDIX 1-A

### Summary of Prioritization Criteria for Title V Needs Assessment<sup>1</sup>

#### 1. Extent of the health issue within the target population

Incidence/prevalence

#### 2. Urgency/Severity of the health issue within the target population

Death &/or hospitalization over a person's lifetime?

Physical (disability, communicability, other health problems) consequences?

Social-emotional/economic consequences?

Are trends increasing/worsening over time?

Are Hawaii rates higher than national rates?

#### 3. Amenable to CHANGE in 5 years

Knowledge of intervention strategies & proven effectiveness

Evidence based strategies preferred

If strategy is not proven, then please indicate

#### 4: Feasibility

- **Propriety:** Is the health issue one that falls within the Department of Health's overall mission?
- **Legality:** Does the Department of Health have authority under legislation or policy to implement an intervention/address the health issue?
- **Economics:** Does it make economic sense to address the health issue? Are there economic consequences if the health issue is not addressed?
- **Acceptability:** Is the intervention for the health issue acceptable to the state/legislature/community? Does the state/legislature/community identify the health issues identified as a problem?
- **Resources:** Are resources available or potentially available to address the problem (e.g., staffing, funding, data systems)?

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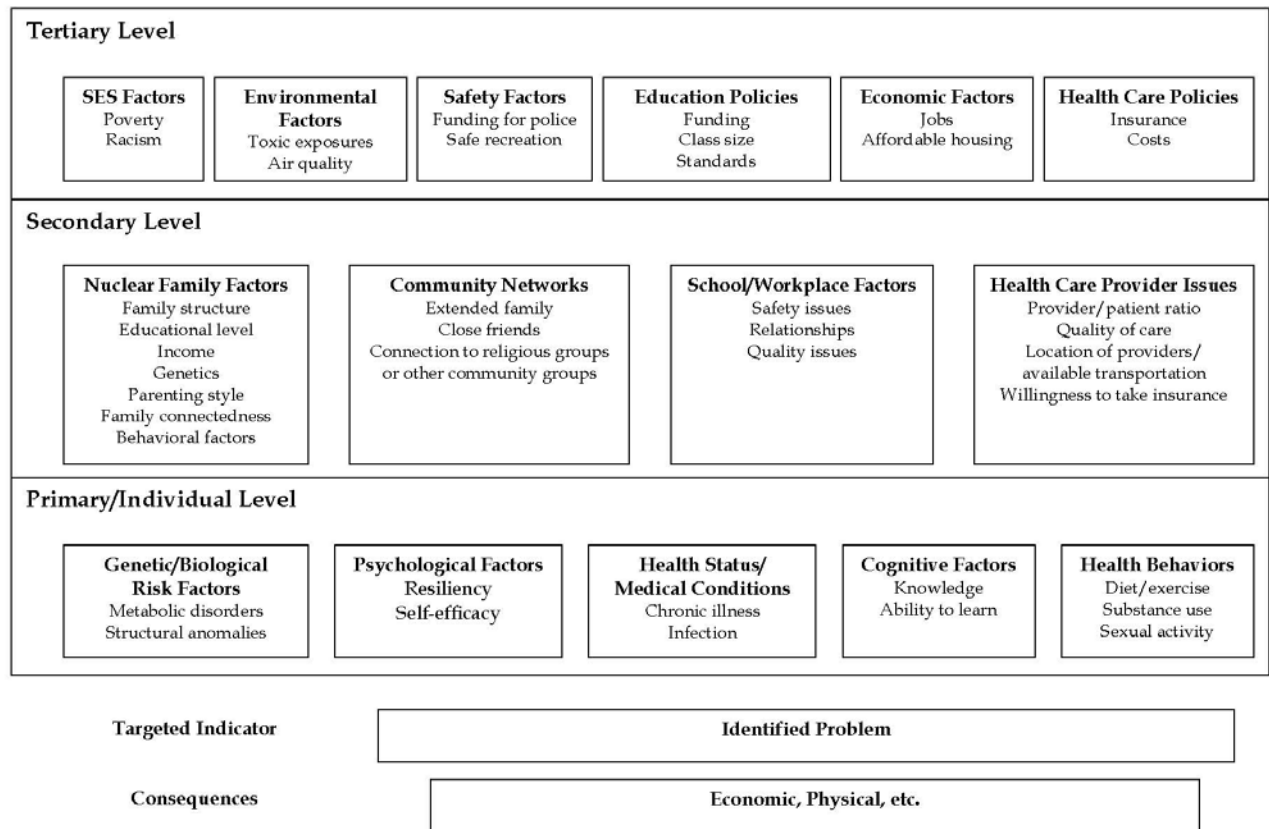
<sup>1</sup> The criteria are adapted from tools developed by:

- 1) the University of California, San Francisco Family Health Outcomes Project,
- 2) the Washington State MCH program in 2000 using G. Pickett & JJ Hanlon in *Public Health Administration and Practice*, 9<sup>th</sup> Edition, St. Louis,: CV Mosby Company, 1990 and
- 3) Centers for Disease Control, Guide for Establishing Public Health Priorities, modified from the CDC Case Study: Translating Science into Practice.

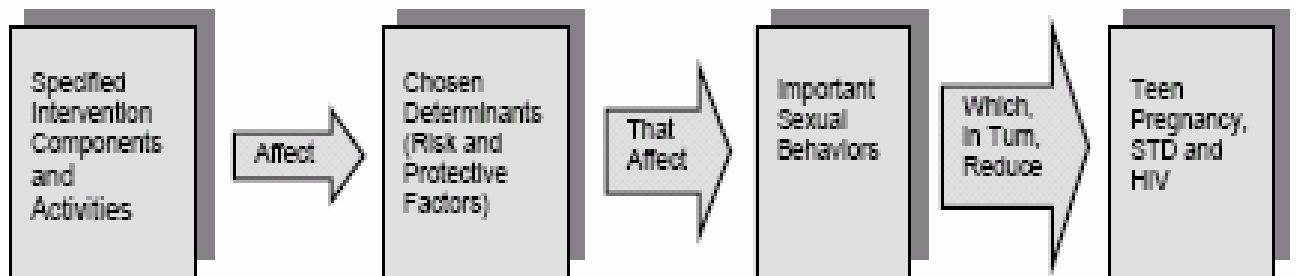
## APPENDIX 1-B: Generic Framework for Health Problem Analysis

From “Conducting a Formal Problem Analysis and Identifying Effective Interventions”  
 The Family Health Outcomes Project, University of California San Francisco  
 Website: <http://www.ucsf.edu/fhop/>

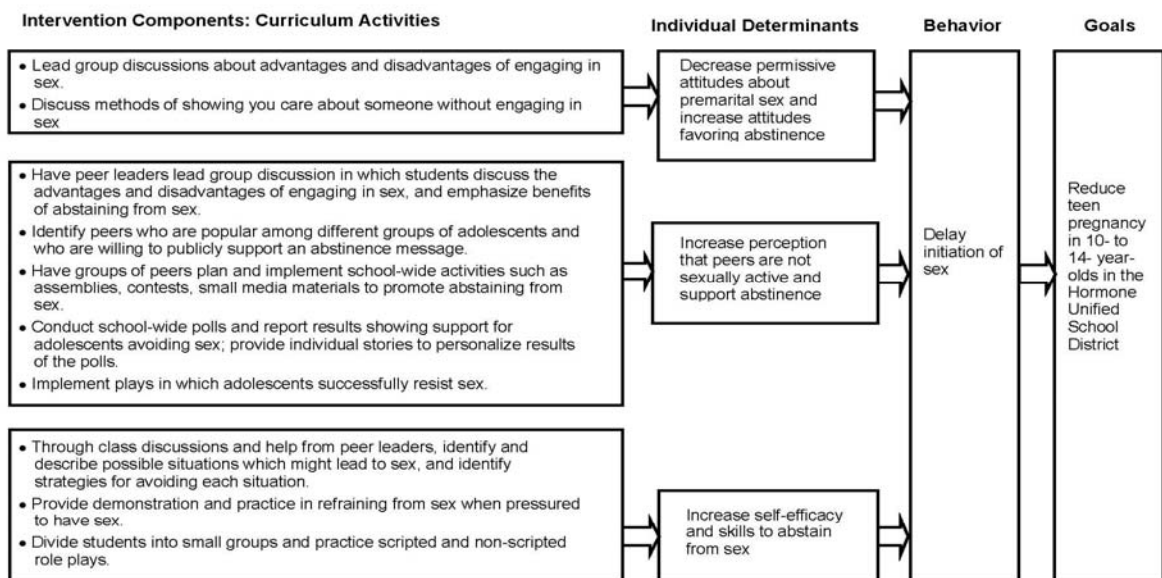
Diagram 1. A Generic Framework for Health Problem Analysis \*



## APPENDIX 1-C: Example of a simple BDI logic model



### Example of BDI Logic Model #1



## **APPENDIX 1-D:** Logic Models for MCH Priorities

## Prenatal Smoking Logic Model

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<p><u>School-based smoking prevention</u></p> <p>Life-skills approach to smoking prevention (Hawaii DOE)</p> <ul style="list-style-type: none"> <li>- Self-Image &amp; Self-Improvement</li> <li>- Decision-Making</li> <li>- Smoking: Myths &amp; Realities</li> <li>- Advertising</li> <li>- Coping with Anxiety</li> <li>- Communication</li> <li>- Social Skills</li> <li>- Assertiveness</li> <li>- Resolving conflicts</li> </ul> <p>Project Toward No Tobacco Use (TNT):</p> <ul style="list-style-type: none"> <li>- Comprehensive, classroom-based curriculum designed to prevent or reduce tobacco use in youth 10-15 yrs old in grades 5-10</li> </ul> <p>Counter marketing campaigns</p> <p>Increased tobacco taxation</p> <ul style="list-style-type: none"> <li>- Increase in tobacco tax legislation introduced in Hawaii State Legislature 2005</li> </ul> <p>Stronger tobacco control policy</p> <ul style="list-style-type: none"> <li>- 2005 Hawaii State Legislation introduced to require businesses to obtain a retail tobacco permit for sale of tobacco</li> </ul>	<p><b><u>Tertiary</u></b></p> <p><u>Environmental Factors</u></p> <ul style="list-style-type: none"> <li>-Girls who initiate smoking have positive image of smokers</li> </ul> <p><u>Media</u></p> <ul style="list-style-type: none"> <li>-Tobacco industry marketing influences susceptibility to &amp; initiation of smoking</li> </ul> <p><b><u>Secondary Level/Community</u></b></p> <p><u>Nuclear Family Factors</u></p> <ul style="list-style-type: none"> <li>-Girls who initiate smoking more likely to have parents who smoke</li> <li>-Sibling smoking associated with younger siblings beginning to smoke</li> </ul> <p><u>Community Networks</u></p> <ul style="list-style-type: none"> <li>-Girls who initiate smoking more likely to have friends who smoke</li> <li>-Girls who initiate smoking tend to have weaker attachments to peers &amp; friends</li> <li>-Girls who initiate smoking have weaker commitment to school or religion</li> </ul> <p><b><u>Primary/Individual Level</u></b></p> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>-Inclined to risk taking &amp; rebelliousness</li> </ul> <p><u>Cognitive Factors</u></p> <ul style="list-style-type: none"> <li>-Girls who initiate smoking have less knowledge of adverse consequences of smoking &amp; addictiveness of nicotine</li> <li>-Girls who initiate smoking believe that smoking can control weight &amp; negative moods</li> <li>-Girls who initiate smoking perceive smoking prevalence to be higher than it actually is</li> </ul> <p><u>Health Behaviors</u></p> <ul style="list-style-type: none"> <li>-Frequent consumption of high fat ("junk food") consumption predictor of smoking initiation</li> </ul>	<p>Key Behavior #1</p> <p><b>Prevent initiation of tobacco use</b></p>	<p><b>Reduce prenatal tobacco use</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<p>Telephone based cessation counseling &amp; follow-up</p> <ul style="list-style-type: none"> <li>- HMSA ('Ready, Set, Quit!')</li> <li>- American Cancer Society</li> <li>- American Legacy Foundation ('Great Start' for pregnant women)</li> <li>- American Lung Association</li> <li>- National Cancer Institute/Cancer Information Smoking Quitline</li> <li>- Kaiser Permanente ('Free &amp; Clear')</li> <li>- Queen's Quit Tobacco Hotline</li> </ul> <p>Group Therapy</p> <ul style="list-style-type: none"> <li>- HMSA</li> <li>- Kaiser Permanente</li> <li>- Quit Quarters (Kona-Kohala Medical Center)</li> <li>- Malama Kauai (for pregnant women &amp; young moms)</li> <li>- Fresh Start at PMRF (Kauai enlisted personnel only)</li> <li>- NOT on Tobacco (Kauai program in high schools)</li> <li>- American Cancer Society (Lanai, Maui, Molokai)</li> <li>- Community Clinic of Maui</li> <li>- Kihei-Wailea Medical Center</li> <li>- Dr. Jill Berry, Clinical Psychologist (Molokai)</li> <li>- American Lung Association of Hawaii ('Freedom from Smoking Clinics', 'NOT on Tobacco')</li> <li>- Castle Medical Center ('BreakFree Hawaii Program' 'Breathe Free Plan')</li> <li>- Kalihi-Palama Health Center (low-income pregnant women &amp; young parents in Kalihi)</li> <li>- Queen's Medical Center ('Smokeless Class', 'Medication Clinic', 'Hypnosis Clinic')</li> <li>- Straub Clinic</li> <li>- UH Manoa Center for Substance Abuse ('Manoa Campus Program')</li> <li>- Waianae Comprehensive Health Center</li> </ul> <p>Individualized smoking cessation counseling</p> <ul style="list-style-type: none"> <li>- Castle Medical Center ('Smoking Cessation Clinic')</li> <li>- Waianae Comprehensive Health Center</li> </ul>	<p><b><u>Tertiary/Policy Determinants</u></b></p> <p><u>Education Policies</u></p> <ul style="list-style-type: none"> <li>-Women who continue to smoke have lower education level than women who quit smoking</li> </ul> <p><u>Economic Factors</u></p> <ul style="list-style-type: none"> <li>-Women who continue to smoke have lower employment levels than women who quit smoking</li> </ul> <p><u>Media</u></p> <ul style="list-style-type: none"> <li>-Tobacco industry marketing dominated by themes of social desirability &amp; independence</li> </ul> <p><b><u>Secondary Level/Community</u></b></p> <p><u>Nuclear family factors</u></p> <ul style="list-style-type: none"> <li>-Single mother</li> <li>-Growing up with one parent</li> <li>-Difficult childhood</li> </ul> <p><u>Community Networks</u></p> <ul style="list-style-type: none"> <li>-Women who continue to smoke have less social support for stopping</li> <li>-Partner smokes</li> </ul> <p><b><u>Primary/Individual Level</u></b></p> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>-Women who continue smoking are less confident in resisting temptations to smoke</li> <li>+Previously quit for &gt;1 week</li> </ul> <p><u>Cognitive Factors</u></p> <ul style="list-style-type: none"> <li>-Women who continue smoking are cognitively less ready to stop smoking</li> <li>+Belief that children of smokers are more likely to get infections</li> </ul>	<p>Key Behavior #2</p> <p><b>Increase tobacco cessation</b></p>	<p><b>Reduce prenatal tobacco use</b></p>



Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<p>Pharmacotherapy</p> <ul style="list-style-type: none"> <li>- Community Clinic of Maui</li> <li>- Dr. Jill Berry, Clinical Psychologist (w/ Dr referral)</li> </ul> <p>Provider Training</p> <ul style="list-style-type: none"> <li>- UH Residency Programs 'Tobacco Reduction Project/TREAT (Tobacco Reduction Education &amp; Action Team) to develop &amp; implement curricula to train medical residents on brief intervention &amp; tobacco use reduction</li> </ul>	<p><b><u>Primary/Individual Level (continued)</u></b></p> <p><u>Health Status/Medical Conditions</u></p> <ul style="list-style-type: none"> <li>-Women who continue smoking tend to be more addicted to cigarettes (higher # cigarettes/day)</li> <li>-Start smoking at young age</li> </ul>	<p>Key Behavior #2 (continued)</p> <p><b>Increase tobacco cessation</b></p>	<p><b>Reduce prenatal tobacco use</b></p>

**Prenatal Alcohol Use Logic Model: Existing Intervention, Determinants & Behaviors**

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p><u>Skills-building Programs (Preparation for job seeking)</u></p> <ul style="list-style-type: none"> <li>- Literacy</li> <li>- GED</li> <li>- Computer</li> </ul> <p>FASD Initiative to develop a state strategic plan in prevention of FASD</p> <p><b><u>School-based Alcohol Prevention</u></b></p> <ul style="list-style-type: none"> <li>- Research-based curriculum covering 3-year span to promote drug resistance, self-management, and social competence.</li> <li>- Incorporate alcohol-related risks into sex education/health classes.</li> </ul>	<p><b><u>Tertiary</u></b></p> <p><u>SES Factors</u></p> <ul style="list-style-type: none"> <li>- Poverty</li> </ul> <p><u>Environmental Factors</u></p> <ul style="list-style-type: none"> <li>- Widespread cultural acceptance of alcohol use</li> </ul> <p><u>Economic Factors</u></p> <ul style="list-style-type: none"> <li>- Homelessness,</li> <li>- Unemployment</li> <li>- Income &lt; \$10,000</li> <li>- Income &gt; \$50,000</li> </ul> <p><u>Health Care Policies/Legislative</u></p> <ul style="list-style-type: none"> <li>+ HCR 141 extended for one more year</li> <li>+ FASD Initiative till August 2005</li> <li>+ Legal drinking age 21 years</li> </ul> <p><b><u>Secondary/Community</u></b></p> <p><u>Nuclear Family Factors</u></p> <ul style="list-style-type: none"> <li>- Partner use of alcohol</li> <li>- Family violence</li> <li>- Unstable environment</li> </ul> <p><u>Community Networks</u></p> <ul style="list-style-type: none"> <li>- Widespread, cultural acceptance of alcohol</li> <li>- Stigma leads to under-reporting</li> <li>- Fear of prosecution leads to under-reporting</li> <li>- Lack of treatment resources and gender-specific resources</li> <li>- Transportation difficulties</li> <li>- Lack of child care</li> <li>- Lack of access to early prenatal care</li> </ul>	<p><b>Prevent Initiation of Prenatal Alcohol Use</b></p>	<p><b>Reduce Prenatal Alcohol Use</b></p>

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p><b>Collaborative efforts by providers and community members to advocate and educate regarding the needs and issues surrounding the pregnant women, and infants and children who are substance-exposed.</b></p> <p><b><u>Intervention Services</u></b>  <b>Screening, outreach, management, referral, education, and support services to pregnant and parenting women.</b></p> <p><b><u>Treatment Services</u></b></p> <ul style="list-style-type: none"> <li>- Residential treatment services for comprehensive alcohol/drug treatment. Provides access to knowledge, skills, and attitudes that support a drug-free lifestyle and maximizes the individual's maximum potential. Services include individualized treatment, case management, therapy, educational classes, 12-step meetings, transportation, childcare, etc.</li> <li>- Outpatient screening, assessment, and treatment programs.</li> <li>- Inpatient treatment program</li> </ul>	<p><b><u>Secondary/Community (continued)</u></b></p> <p><u>School/Workplace Factors</u></p> <ul style="list-style-type: none"> <li>+ Schools have some anti-substance use curricula in place. Life skills training (LST)</li> <li>+ State workplaces: zero tolerance for alcohol</li> </ul> <p><u>Health Care Provider Issues</u></p> <ul style="list-style-type: none"> <li>- Providers have limited time to spend per client</li> <li>+ Universal screening in ACOG standards</li> <li>- Lack of access to early prenatal care</li> <li>- Transportation</li> <li>- Access to child care</li> </ul> <p><b><u>Primary/Individual Determinants</u></b></p> <p><u>Genetic/Biological Risk Factors</u></p> <ul style="list-style-type: none"> <li>+/- Biological factors (Can be protective or a risk factor)</li> <li>- Early introduction to alcohol (ages 11-14 years old)</li> <li>- Women &gt; 30 years are less likely to reduce alcohol use after learning they are pregnant</li> </ul> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>- Mental health issues, addiction</li> <li>+ Decrease permissive attitudes towards drinking</li> <li>-/+ Coping mechanisms in times of stress</li> </ul> <p><u>Cognitive Factors</u></p> <ul style="list-style-type: none"> <li>+ Increase perceived risk to fetus if using alcohol when pregnant</li> </ul> <p><u>Health/Behaviors</u></p> <ul style="list-style-type: none"> <li>- Unintended pregnancy</li> <li>- Previous birth of child w/FASD</li> <li>-/+ Pattern of alcohol use before pregnancy</li> <li>-/+ Reproductive Responsibility</li> </ul>	<p><b>Prevent Initiation of Prenatal Alcohol Use</b></p> <p><i>(continued)</i></p>	<p><b>Reduce Prenatal Alcohol Use</b></p>

Underage Drinking Logic Model			
INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<ul style="list-style-type: none"> <li>+ Media Literacy.</li> <li>+ Anti alcohol media campaign.</li> <li>+ Opportunities for youth to participate in community activities to develop life skills, greater communication skills, strengthen interpersonal skills, decreased involvement in risky behaviors, decreased juvenile delinquency and violence, decreased risk of dropping out of school, increased academic achievement, increased safety.</li> <li>+ Caring and support from community.</li> <li>+ Minimum Legal Drinking Age Enforcement</li> <li>+ Periodic compliance checks that monitors the proportion of alcohol purchase attempts by people appearing to be underage.</li> <li>+ Increased enforcement of drunk driving laws.</li> <li>+ Increased price/ federal excise tax of alcohol. Use excise tax to fund teen alcohol prevention and education programs.</li> <li>+ Server and manager training programs that include checking age identification, detecting and handling false age identification documents, offering food and non-alcoholic beverage options and refusing alcohol service. Voluntary or required by local or state laws.</li> <li>+ Presence of a significant adult.</li> <li>+ Frequent and consistent communication with parents.</li> <li>+ Strong parental guidance.</li> </ul>	<p><u>Tertiary:</u></p> <p>Environmental/Policy</p> <ul style="list-style-type: none"> <li>- Pro-alcohol use in the media.</li> <li>- Inadequate youth services and opportunity for youth involvement in the community.</li> <li>- Community attitudes favor alcohol use.</li> <li>- Lack of community bonding.</li> <li>- Community disorganization.</li> <li>- Inadequate compliance checks</li> <li>- Inexpensive alcohol products (beer)</li> <li>- Inadequate knowledge and skills of servers/managers at commercial establishments.</li> </ul> <p><u>Secondary:</u></p> <p>Family</p> <ul style="list-style-type: none"> <li>- Family attitudes favor alcohol use.</li> <li>- Poor child supervision and discipline.</li> <li>- Inconsistent rules and consequences related to alcohol use.</li> </ul>	<p>Key Behavior #1</p> <p>Prevent initiation of underage drinking</p>	<p>Reduce underage drinking</p>

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<ul style="list-style-type: none"> <li>+ Parent involvement in homework and school-related activities.</li> <li>+ Integration of children into family activities and rewarding behaviors that conform to family rules and expectations.</li> <li>+ Parent training on rewarding children for positive family involvement, interaction establishing child expectations, careful monitoring, appropriate discipline and managing family conflict.</li> <li>+ Clear standards and rules for appropriate behavior.</li> <li>+ Sense of community in the classroom.</li> <li>+ School bonding.</li> <li>+ Youth participation involvement and responsibility in school tasks.</li> <li>+ Curricula that covers drug information, alcohol/drug resistance skills, self management skills, &amp; general social skills.</li> <li>+ Stronger association with peers who are religion, or other organized activities.</li> <li>+ Responsible behavior modeled by peer group/leader. Peer leader facilitation.</li> <li>+ Social, life and refusal skills training.</li> <li>+ Problem-solving skills.</li> <li>+ Promotion of social competence.</li> <li>+ Modeling &amp; role playing of resistance skills</li> <li>+ Cooperation</li> </ul>	<p><u>Secondary (continued)</u></p> <ul style="list-style-type: none"> <li>- Availability and use of alcohol in the home.</li> <li>- Poor quality of parent-child relationships.</li> <li>- Inconsistent rules and consequences related to alcohol use.</li> <li>- Lack of school bonding.</li> <li>- Favorable staff and students attitudes toward alcohol use</li> <li>- Association with delinquent peers activities.</li> <li>- Susceptibility to negative peer pressure.</li> <li>- Inadequate life skills.</li> <li>- Lack of peer-refusal skills.</li> <li>- Favorable attitudes towards alcohol use.</li> </ul>	<p>Key Behavior #1 (continued)</p> <p>Prevent initiation of underage drinking</p>	<p>Reduce underage drinking</p>

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<ul style="list-style-type: none"> <li>+ Attachment to parents and other caring adults.</li> <li>+ Belief in society's values.</li> <li>+ AAP encourage all providers of adolescent health to discuss with their patients the hazards of alcohol as a routine part of risk behavioral assessment.</li>   <li>+ Anti alcohol media campaign.</li> <li>+ Consistent and increase frequency of compliance check programs in retail outlets and restaurants/bars.</li>   <li>+ Increasing alcohol taxes and tax revenue to be used for treatment and prevention.</li> <li>+ Reducing commercial availability</li> <li>+ Reducing public and social availability such as drinking in public places such as beaches, zoos, and parks.</li>   <li>+ Clear standards and rules of appropriate behavior.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of family, school and community bonding.</li>   <li><u>Tertiary:</u> Environmental/Policy               <ul style="list-style-type: none"> <li>- Pro alcohol use in the media and advertising.</li> <li>- Inconsistent compliance check programs in retail outlets.</li> <li>- No regulatory laws of internet sales and home delivery of alcohol.</li> <li>- Youth access to alcohol use.</li> </ul> </li>   <li><u>Secondary:</u> Family               <ul style="list-style-type: none"> <li>- Lack of inconsistent legal consequences for adults responsible for illegal consumption of alcohol by minors.</li> <li>- Use of and favorable attitudes of alcohol use.</li> </ul> </li>   <li>School               <ul style="list-style-type: none"> <li>- Inconsistent rules and consequences related to alcohol use.</li> <li>- Lack of consistent enforcement of law related to alcohol use.</li> </ul> </li> </ul>	<p>Key Behavior #2</p> <p>Increase adolescent alcohol cessation</p>	<p>Reduce underage drinking</p>

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>+ Stronger association with peers who are involved in organized activities such as community services, faith community, school, sports/recreation, youth organizations, after-school youth programs, etc.</p> <p>+ Responsible behavior modeled by peer group/leader.</p>	<p><u>Secondary (continued)</u></p> <p>Peer</p> <ul style="list-style-type: none"> <li>- Association with delinquent peers.</li> <li>- Susceptibility to peer pressure</li> </ul> <p><u>Primary/Individual:</u></p> <ul style="list-style-type: none"> <li>- Early onset of alcohol use.</li> <li>- Genetic risk factor.</li> <li>- Addiction.</li> <li>- Depression.</li> </ul>	<p>Key Behavior #2 (continued)</p> <p>Increase adolescent alcohol cessation</p>	<p>Reduce underage drinking</p>

## Child Oral Health Logic Model

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>Limited education of medical professionals on the importance of establishing a dental home</p> <p>Limited education of dentists to establish dental home by 1 year of age</p> <p>Community dental clinics for Medicaid and low-income children on all islands except Molokai (in development) &amp; Lanai (one private dental office)</p> <p>Limited education of parents/caregivers/children</p> <p>Major oral health education programs: DOH/DHD, WIC, Head Start</p>	<p><b><u>Primary/Individual</u></b></p> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>- Fear of dentists</li> <li>- Fear of pain from dental treatment</li> </ul> <p><b><u>Secondary/Community</u></b></p> <p><u>Family</u></p> <ul style="list-style-type: none"> <li>- Lack of oral health education among parents &amp; extended family</li> <li>- Lack of oral health education for caregivers</li> <li>- Cultural barriers, language, feeding practices (lead to Baby Bottle Tooth Decay)</li> </ul> <p><u>Health Care Provider Issues</u></p> <ul style="list-style-type: none"> <li>+ Training on early oral health assessment &amp; intervention</li> <li>- Lack of access to dental care services</li> <li>- Lack of dental home for regular preventive care from age 1</li> <li>- Lack of dental providers for Children with special needs</li> <li>+ PMD assessment &amp; referral for oral health, reinforce importance of fluoride supplements</li> </ul> <p><b><u>Tertiary</u></b></p> <p><u>Social Economic Status</u></p> <ul style="list-style-type: none"> <li>- Asian &amp; Pacific Islander are at greater risk</li> <li>- Poverty</li> </ul> <p><u>School Policy</u></p> <ul style="list-style-type: none"> <li>+ Requirement for dental certificate to enter preschool or kindergarten</li> </ul> <p><u>Health Care Policy</u></p> <ul style="list-style-type: none"> <li>+ Accepted standards for anticipatory guidance</li> <li>+ Recommend initial dental visit by age 1</li> <li>- Co-payments required for dental visits</li> <li>+ Recognize oral health's importance to well-being of child</li> <li>+ Dental insurance coverage</li> <li>- Decreasing funding for State dental health programs</li> </ul>	<p>Key behavior #1</p> <p><b>Establish dental home &amp; visit dentist regularly</b></p>	<p><b>Prevent childhood dental caries</b></p>



EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>DOE &amp; DOH partnership to advocate limiting:</p> <ol style="list-style-type: none"> <li>1. sodas in vending machines</li> <li>2. sugary snacks in schools</li> </ol> <p>Sodas limited in school vending machines</p> <p>Limited education of parents, caregivers and children about importance of limiting sugar, good nutrition, proper toothbrushing and rinsing mouth when brushing not possible</p> <p>Major oral health education programs- DOH/DHD, WIC, Headstart</p>	<p><b><u>Primary/Individual</u></b></p> <p><u>Health Behaviors</u></p> <ul style="list-style-type: none"> <li>- Poor eating habits of child</li> <li>- Consumption of sugary drinks</li> <li>- Using bottle feeding after age 1</li> <li>- Poor oral hygiene habits</li> </ul> <p><b><u>Secondary/Community</u></b></p> <p><u>Family</u></p> <ul style="list-style-type: none"> <li>+ Effective parenting skills</li> <li>- Poor eating habits of mother (prenatally) and family</li> <li>- Lack of education among parents &amp; extended family</li> <li>- Lack of education for caregivers</li> <li>-- Cultural barriers that determine feeding practices (lead to Baby Bottle Tooth Decay)</li> <li>- Lack of knowledge of nutritious foods, need to limit sugary foods (i.e. soda, candy)</li> <li>- Not a priority for parents/caregivers</li> </ul> <p><u>Health Care Provider</u></p> <ul style="list-style-type: none"> <li>+ PMD &amp; dental professionals provide oral health education</li> <li>- PMD &amp; staff may not consider this a high priority</li> </ul> <p><b><u>Tertiary</u></b></p> <p><u>Health Care Policy</u></p> <ul style="list-style-type: none"> <li>+ Accepted standards for anticipatory guidance</li> </ul>	<p>Key behavior #2</p> <p><b>Develop good oral health habits</b></p>	<p><b>Prevent childhood dental caries</b></p>

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>Limited instructions by PMD &amp; dental providers to parents, caregivers, and children on importance of daily fluoride supplements</p> <p>Major oral health education programs: DOH/DHD, WIC, Headstart</p>	<p><b><u>Primary/Individual</u></b></p> <p><u>Health Behaviors</u></p> <ul style="list-style-type: none"> <li>- Inconsistent use of daily fluoride supplements</li> </ul> <p><b><u>Secondary/Community</u></b></p> <p><u>Family</u></p> <ul style="list-style-type: none"> <li>- Parents not aware of importance of fluoride supplements</li> <li>- Parents do not place high priority</li> <li>- Lack of education among parents/caregivers</li> </ul> <p><u>Health Care Provider</u></p> <ul style="list-style-type: none"> <li>- PMD &amp; dental staff do not place high priority</li> </ul> <p><b><u>Tertiary</u></b></p> <p><u>Health Care Policy</u></p> <ul style="list-style-type: none"> <li>+ Fluoride supplements are standard of care</li> <li>+ Community water fluoridation is most cost effective means to prevent dental caries</li> <li>- Lack of community water fluoridation in civilian population in Hawaii</li> </ul>	<p>Key behavior #3</p> <p><b>Consistent use of daily fluoride supplements from 6 months to 16 years of age</b></p>	<p><b>Prevent childhood dental caries</b></p>

## Childhood Obesity Logic Model

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>Government agencies are supporting states in their efforts to address the problem</p> <p>Large fast food chains are increasing the number of healthy choices on their menus</p> <p>HMSA's "Get Healthy Now" campaign simultaneously targets children parents through TV public service announcements, classroom curriculum and an Internet component, as well as other programs to promote nutrition and fitness (e.g., 5 A Day)</p> <p>"1% or less Milk Campaign" by the Healthy Hawaii Initiative.</p> <p>Medicaid now recognizes obesity as a diagnosis</p> <p>New DOE policy re: vending machines → need to contain 80% "healthy drinks"</p> <p>DOE has convened a Nutrition committee to address nutritional issues and school meals</p> <p>"Lunch Bunch": Preschool standards for nutrition, including what parents can bring in are being developed.</p> <p>Individual doctors are providing interventions to their clients on their own.</p> <p>Kapiolani Medical Center hosts the Obesity Task Force to address the issue. A Pediatric Obesity in Hawaii White Paper was developed which includes description of the problem and possible action steps.</p> <p>State legislation introduced through the Legislative sub-committee of the Obesity Coalition and the Keiki Caucus (a legislative group addressing the needs of children) addressing school and state issues.</p>	<p><b><u>Tertiary Level</u></b></p> <ul style="list-style-type: none"> <li>- Low SES → food insecurity</li> <li>- Higher cost of healthy foods</li> <li>- Media advertising directed at children</li> <li>- "Supersize" portions with fast foods</li> <li>+ National attention on the obesity problem</li> <li>- Providers are not reimbursed by medical insurance for obesity prevention/treatment</li> <li>+ Institute of Medicine (IOM) recommendations to USDA re: the WIC food package to include more fruit and vegetables, whole grains, skim milk and the elimination of fruit juice.</li> </ul> <p><b><u>Secondary Level</u></b></p> <p><u>Schools:</u></p> <ul style="list-style-type: none"> <li>- Selling candies, sausages, pastries for fund-raising</li> <li>- Vending machines with unhealthy snacks/drinks on school grounds</li> <li>+ Drinking water is encouraged</li> </ul> <p><u>Preschools</u></p> <ul style="list-style-type: none"> <li>- Not all preschools participate in the USDA food program (which requires that menus be checked by a dietitian)</li> <li>- Sugar sweetened foods are used for holiday, birthday celebrations</li> </ul> <p><u>Community:</u></p> <ul style="list-style-type: none"> <li>- Convenience stores are numerous in all neighborhoods</li> <li>- There are many fast-food establishments in the community</li> </ul> <p><u>Nuclear Family</u></p> <ul style="list-style-type: none"> <li>- Easy access to inexpensive energy dense with low nutritional value foods</li> <li>- Smaller families → more convenient to eat out</li> </ul>	<p>#1 Nutrition</p> <ul style="list-style-type: none"> <li>➤ Limit consumption of foods that are calorie dense and nutrient foods and drinks (includes fruit juices)</li> <li>➤ Limit consumption of fast foods</li> <li>➤ Limit consumption of processed foods</li> <li>➤ Increase regular consumption of fruits and vegetables (fresh, frozen, or canned)</li> </ul>	<p><b>Goal #1</b></p> <p><b>Improve all children's nutrition</b></p>

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>Individual doctors are piloting interventions with their own clients (e.g., one doctor is using a modified Red, Yellow, Green Light program).</p> <p>The primary care health centers acknowledge the increasing overweight in children in their population and will be working with the Maternal and Child Health Branch to address data collection, develop protocols for at-risk children and to seek best practice programs for primary and secondary intervention.</p> <p><b>The Coordinated School Health program, funded by the Tobacco Settlement, works with schools and their communities in increasing physical activity, improving nutrition and decreasing smoking.</b></p> <p>Hawaii WIC/DOH sponsored obesity prevention conferences in 2003 and 2005 for WIC staff and public health providers.</p> <p>WIC has developed an obesity prevention curriculum for WIC recipients and tracks obesity data through the Pediatric Nutrition Surveillance System (PedNSS) as well as the Hawaii WIC automated computer system known as SWICH.</p>	<p><b><u>Secondary Level (continued)</u></b></p> <p><u>Extended Family</u></p> <ul style="list-style-type: none"> <li>- Differing cultural values from parents (e.g., fat children are healthy children)</li> <li>- Extended families &amp; child care providers may not follow parents dietary instructions</li> </ul> <p><b><u>Primary Level</u></b></p> <p><u>Individual</u></p> <ul style="list-style-type: none"> <li>- Habit/preference for foods that are high in sugar and fat</li> </ul>	<p><b>#1 Nutrition (continued)</b></p> <ul style="list-style-type: none"> <li>➤ Limit consumption of foods that are calorie dense and nutrient foods and drinks (includes fruit juices)</li> <li>➤ Limit consumption of fast foods</li> <li>➤ Limit consumption of processed foods</li> <li>➤ Increase regular consumption of fruits and vegetables (fresh, frozen, or canned)</li> </ul>	<p><b>Goal #1</b></p> <p><b>Improve all children's nutrition</b></p>

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>WIC program offers food supplements and nutrition counseling for families who income qualify.</p> <p>Head Start and Early Head Start programs are beginning to address the issue of overweight in their populations to assist parents.</p> <p>Nutrition Education Program (NEP) and the Expanded Food Nutrition Education (EFNEP) of the University of Hawaii's College of Tropical Agriculture. These programs enhance food and nutrition security for low income families by providing nutrition education assist households with information, education and skills to improve diets and health.</p>	<p><b><u>Tertiary Level</u></b></p> <ul style="list-style-type: none"> <li>- SES: Food insecurity</li> <li>+ USDA, FNS Nutrition Council MOU included 5 a day and 30 minutes of exercise as a key message.</li> <li>+ Availability of the Food Stamp Program, Child Nutrition Programs, the Emergency Food Assistance Program</li> </ul> <p><b><u>Secondary Level</u></b></p> <p><u>Community</u></p> <ul style="list-style-type: none"> <li>+ Availability of Food Bank, church pantries</li> <li>+ Open markets</li> <li>- Families do not work, go to school in the community they live in (more travel time)</li> <li>- Large number of fast-foods and convenience stores</li> <li>- Easy access to vending machines containing energy dense food with low nutrient value in the malls, stores, airports</li> </ul> <p><u>Workplace/ Business</u></p> <ul style="list-style-type: none"> <li>- Lack of family-friendly policies</li> <li>- Lack of breastfeeding in work place policies</li> </ul> <p><u>Nuclear Families</u></p> <ul style="list-style-type: none"> <li>- Parents are stressed, pressed for time</li> <li>- Parents work long hours at a job or work 2 or more jobs</li> <li>- Families are smaller (less children)</li> <li>- Easy access to inexpensive energy dense foods with low nutrient value</li> <li>- Eat out often</li> <li>- More use of prepared foods when eating at home</li> <li>- When at home do not sit down to eat together (e.g. watch TV, read, eat meals at different times).</li> </ul> <p><b><u>Primary Level</u></b></p> <p><u>Individual</u></p> <ul style="list-style-type: none"> <li>- Higher intake of foods high in sugar and fat</li> <li>- Eating habits and food preferences established early in life</li> </ul>	<p><b>#2 Regular family meal patterns</b></p> <p><b>#3 Positive feeding relationships between parents and their children</b></p> <p><b>#4 Parent/child able to prevent obesity through knowledge &amp; skills</b></p>	<p><b>Goal #1</b></p> <p><b>Improve all children's nutrition</b></p>

EXISTING INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p>Bills were introduced through the Legislative sub-committee of the Obesity Coalition and the Keiki Caucus (a legislative group addressing the needs of children) to increase physical education in the schools and to provide after school activities.</p> <p>Safe Routes to School program under the Injury Control and Prevention Program works with communities to ensure safe walkable routes to schools for children. Pedometers are used to walk around the schools in areas where there are no safe routes.</p> <p>American Heart Association continues to sponsor the yearly "Jump Rope for Health" program.</p> <p>HMSA has partnered with the Department of Education and the University of Hawaii to develop the Fun 5 physical activity and nutrition program for kids. The program is designed to be easily incorporated into A+ programs or elementary school classes.</p> <p>HMSA's "Get Healthy Now" campaign simultaneously targets children parents through TV public service announcements, classroom curriculum and an Internet component, as well as other programs to promote nutrition and fitness (e.g., Keiki Fun Run, Try Fest)</p> <p>The Coordinated School Health program, funded by the Tobacco Settlement, works with schools and their communities in increasing physical activity, improving nutrition and decreasing smoking.</p>	<p><b><u>Tertiary Level</u></b></p> <ul style="list-style-type: none"> <li>- "No Child left Behind" has increased focus and resources on academics.</li> <li>- SES limits choices for physical activity</li> </ul> <p><b><u>Secondary Level</u></b></p> <p><u>Schools</u></p> <ul style="list-style-type: none"> <li>- Time devoted to physical education is left to the discretion of the elementary school's principal.</li> <li>- Required credits needed in health and physical education in the middle and high schools is decreasing</li> <li>- Recess time is being limited</li> <li>- Recess is used as punishment or make-up school work time</li> </ul> <p><u>Community</u></p> <ul style="list-style-type: none"> <li>- Lack of safe and walkable routes to school and for leisure</li> </ul> <p><u>Nuclear family</u></p> <ul style="list-style-type: none"> <li>- Parents shop and work outside of their communities</li> <li>- Parents keep children indoors due to safety concerns</li> <li>- Screen time (computer, TV, video games) used as baby sitter, a way of handling stress (vegging)</li> </ul> <p><u>Health Care Providers</u></p> <ul style="list-style-type: none"> <li>- Do not usually ask about child's level of activity and screen time</li> </ul> <p><b><u>Primary Level</u></b></p> <ul style="list-style-type: none"> <li>- Increase use of screen time and decreased physical activity becomes a habit</li> </ul>	<p><b>Increase physical activity/physical education in schools.</b></p> <p><b>Increase physical activity after school</b></p> <p><b>Increase use of transit</b></p>	<p><b>Goal #2</b></p> <p><b>Increase regular physical activity for all children</b></p>

### Early Hearing Detection and Intervention Logic Model

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p><b>Tertiary</b></p> <ul style="list-style-type: none"> <li>• MCH Bureau support for newborn hearing screening (funding, Title V national performance measure). CDC support for early hearing detection and intervention (EHDI) integration (funding, guidelines). CDC and MCH Bureau collaborate/coordinate in these efforts, &amp; working with stakeholders at national level.</li> <li>• Technical assistance is available through National Center for Hearing Assessment and Management (NCHAM)</li> <li>• “Year 2000 Position Statement: Principles and Guidelines for EHDI Programs” (Joint Committee on Infant Hearing).</li> <li>• American Academy of Pediatrics (AAP) educational materials on hearing screening and follow-up</li> <li>• Screening guidelines – AAP, EPSDT</li> <li>• State law mandating newborn hearing screening and reporting of results to DOH. Establishment of administrative rules.</li> <li>• Child find component of Part C of IDEA.</li> <li>• State goal of “All children will be safe, healthy, and ready to succeed”</li> </ul>	<p><u>Tertiary</u></p> <ul style="list-style-type: none"> <li>+ Statutes and regulations mandating newborn hearing screening and follow-up</li> <li>+ Information and education provided at national level</li> <li>+ Coordination with stakeholders at national level</li> <li>+ Financial support for newborn hearing screening and follow-up provided at national levels</li> <li>+ Guidelines and protocols for screening and follow-up are provided at national level</li> <li>+ Technical assistance provided at national level</li> <li>+ Statewide policy supporting success in early childhood</li> </ul>	Infant receives hearing screening by age 1 month	Early identification and intervention for infants with hearing loss
<p><u>Secondary Level/Community</u></p> <ul style="list-style-type: none"> <li>• HI*TRACK data management system is in place, with data from hospitals submitted to the State Newborn Hearing Program.</li> <li>• State Newborn Hearing Screening Program provides technical assistance and support to hospital newborn screening programs.</li> <li>• Each birthing facility has its own newborn hearing screening coordinator/program.</li> <li>• Birthing facilities provide hearing screening information to families.</li> <li>• Purchase of hospital newborn hearing screening program equipment through MCH Bureau and CDC grant funds if hospital lacks funds.</li> <li>• Education sessions and materials for physicians, midwives, and other providers on screening and appropriate follow-up.</li> <li>• State has a mechanism to ensure that infants not born in birthing hospitals will receive hearing screening, and to assure follow-up for infants who fail screening.</li> </ul>	<p><u>Secondary Level/Community</u></p> <p>State Newborn Hearing Screening Program:</p> <ul style="list-style-type: none"> <li>+ Data management system for tracking screening/follow-up and quality assurance.</li> </ul> <p>Hospital newborn hearing screening program:</p> <ul style="list-style-type: none"> <li>+ Every birthing facility has a newborn hearing screening program.</li> <li>- Lack of adequate hearing screening equipment especially in rural areas, and insufficient funding for equipment.</li> </ul> <p>Primary care physicians, midwives, and other providers:</p> <ul style="list-style-type: none"> <li>- Insufficient knowledge about screening and appropriate follow-up.</li> <li>- Incomplete tracking system to ensure every infant under their care receives appropriate screening and follow-up.</li> </ul>		
<p><u>Primary/Individual Level</u></p> <ul style="list-style-type: none"> <li>• Physicians, midwives, and others provide information/education to families on screening/follow-up.</li> <li>• Health insurance pays for newborn screening as part of fee for hospital infant care. Newborn Hearing Screening Program pays for screening for families who lack health insurance or whose health insurance does not fully cover outpatient hearing screening.</li> <li>• Written educational materials are available in different languages.</li> </ul>	<p><u>Primary/Individual Level</u></p> <ul style="list-style-type: none"> <li>- Family lacks information about hearing screening.</li> <li>- Family lacks financial resources for hearing screening.</li> <li>- Homebirths are less likely to have screening.</li> <li>- Infant's medical condition may delay screening.</li> </ul>		

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<u>Tertiary</u> <i>See previous section.</i>	<u>Tertiary</u> <i>See previous section.</i>	Infant who fails hearing screen receives diagnostic audiologic evaluation by age 3 months	Early identification and intervention for infants with hearing loss
<u>Secondary Level/Community</u> <ul style="list-style-type: none"> <li>• HI*TRACK data management system is in place.</li> <li>• System is in place to reduce financial and geographic barriers to diagnostic audiologic evaluations.</li> <li>• Establishment of guidelines for pediatric diagnostic audiologic evaluations.</li> <li>• Education for primary care providers, care coordinators, audiologists, etc., on appropriate diagnostic follow-up for infants who fail hearing screening.</li> </ul>	<u>Secondary Level/Community</u> State Newborn Hearing Screening Program: <ul style="list-style-type: none"> <li>- Lack of data management system to track all diagnostic audiologic evaluations and follow-up for infants who fail hearing screening.</li> </ul> Audiologists <ul style="list-style-type: none"> <li>- Insufficient number of audiologists on Neighbor Islands.</li> <li>+ Guidelines for pediatric diagnostic audiologic evaluations</li> </ul> Primary care physicians <ul style="list-style-type: none"> <li>- Insufficient knowledge about diagnostic audiologic evaluation and follow-up.</li> </ul>		
<u>Primary/Individual Level</u> <ul style="list-style-type: none"> <li>• Provision of education to families about the importance of early diagnosis for hearing loss, provided by the child/families physicians, care coordinators, etc.</li> <li>• Newborn Hearing Screening Program pays for diagnostic audiologic evaluation for families who lack health insurance or whose health insurance does not fully cover confirmatory diagnostic audiological evaluations.</li> <li>• Newborn Hearing Screening Program pays for and arranges transportation for Neighbor Island families to Oahu for diagnostic audiologic evaluation services when they are not available on a Neighbor Island, for families who lack other resources to pay for transportation to confirmatory diagnostic audiological evaluations.</li> </ul>	<u>Primary/Individual Level</u> <ul style="list-style-type: none"> <li>- Family lacks or has insufficient information about importance of early diagnosis for hearing loss.</li> <li>- Family lacks health insurance coverage for diagnostic audiologic evaluation.</li> <li>- Family lacks transportation (e.g. Neighbor Island to Oahu) for diagnostic audiologic evaluation.</li> <li>- Family may not be interested in further evaluation when infant fails hearing screen.</li> <li>- Infant's medical condition may delay evaluation.</li> </ul>		

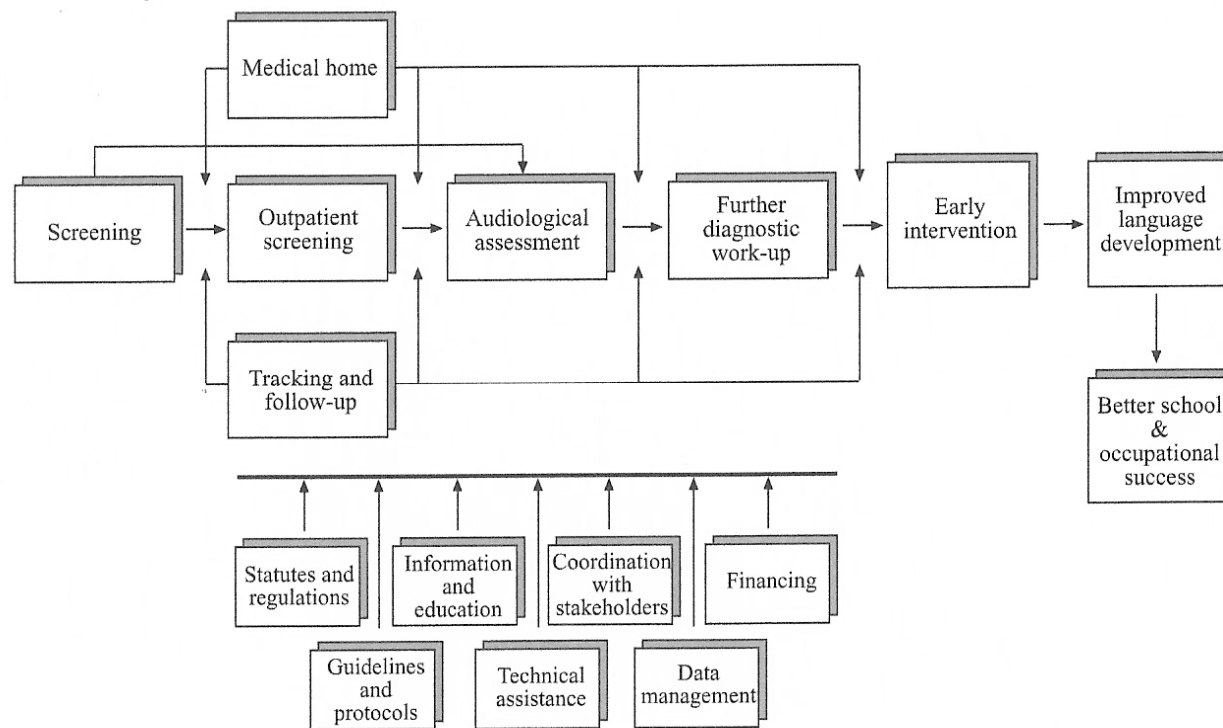


INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<u>Tertiary</u> <i>See also previous section.</i> <ul style="list-style-type: none"> <li>Advocacy for appropriate insurance payment for hearing aids &amp; related services</li> <li>Part C of IDEA</li> </ul>	<u>Tertiary</u> <i>See also previous section.</i> Financing: <ul style="list-style-type: none"> <li>Health plans may not cover hearing aids, or may have inadequate payment for hearing aids &amp; related services.</li> </ul>	Infant who is diagnosed with hearing loss receives early intervention services by age 6 months	Early identification and intervention for infants with hearing loss
<u>Secondary Level/Community</u> <ul style="list-style-type: none"> <li>EIS has a deaf educator to provide consultation on communication, amplification options and appropriate intervention services for children with hearing loss.</li> <li>Language enrichment playgroups.</li> <li>Lending library of educational materials for families and EI staff.</li> <li>Family to family support is provided through gatherings of families of children with hearing loss or parent mentors and advisors ("Ohana Time").</li> <li>Deaf Mentors provide/ individualized family support.</li> <li>Education/training for primary care providers, care coordinators, etc., on appropriate follow-up (e.g., referral for EI services, ENT evaluation, etc.) for infants with diagnosed hearing loss.</li> </ul>	<u>Secondary Level/Community</u> Newborn Hearing Screening Program <ul style="list-style-type: none"> <li>Incomplete data on enrollment of children with hearing loss in EI services. Family Educational Rights and Privacy Act (FERPA) prevents sharing enrollment information with the Newborn Hearing Screening Program without a FERPA consent.</li> </ul> Early intervention services: <ul style="list-style-type: none"> <li>+ Appropriate early intervention services for children with hearing loss.</li> <li>+ Family-to-family support for families/children with hearing loss.</li> </ul> Primary care physicians: <ul style="list-style-type: none"> <li>Lack of knowledge about appropriate follow-up when hearing loss is diagnosed.</li> </ul>		
<u>Primary/Individual Level</u> <ul style="list-style-type: none"> <li>Families are provided early intervention services that meet the needs of families/children with hearing loss.</li> <li>Primary care providers provide information/education to families of children with hearing loss about early intervention services, communication options, etc.</li> <li>Children with Special Health Needs Program pays for hearing aids for eligible children whose families are above income for Medicaid and QUEST and below 300% of the federal poverty level, if the family does not have other resources.</li> <li>Early Intervention Section provides financial assistance for hearing aids for eligible children whose families are above income for the Children with Special Health Needs Program, if the family cannot afford to pay the full cost.</li> </ul>	<u>Primary/Individual Level</u> <ul style="list-style-type: none"> <li>Family of child with hearing loss lacks awareness and knowledge about importance of early intervention services and appropriate amplification for the development of language and communication skills.</li> <li>Family lacks health insurance coverage for hearing aids.</li> <li>Family of infant with hearing loss may not be interested in early intervention services ("denial").</li> <li>Family of infant with hearing loss may not be interested in obtaining hearing aids for their baby ("denial").</li> <li>Infant's medical condition may delay intervention.</li> </ul>		

+ Protective factor    - Risk factor

### CDC Logic Model of the Early Hearing Detection and Intervention System

From: Centers for Disease Control and Prevention, *Early Hearing Detection and Intervention Program Guidance Manual*, February 2003, page 10.



### Transition of Youth with Special Health Care Needs (YSHCN) to Adult Life Logic Model

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<u>Tertiary</u> <ul style="list-style-type: none"> <li>Individuals with Disabilities Education Act (IDEA) mandates transition services beginning at age 16.</li> <li>MCH Bureau supports system-building regarding transition (funding, state grants, Title V national performance measure, etc.)</li> <li>Collaboration/coordination of stakeholders at national level (MCHB, Family Voices, AAP, etc.)</li> <li>Technical assistance is available through the Healthy and Ready to Work National Center (guidelines, educational materials, etc.)</li> <li>"A Consensus Statement on Health Care Transitions for Young Adults with Special Health Care Needs" (American Academy of Pediatrics, American Academy of Family Physicians, American College of Physicians-American Society of Internal Medicine):</li> <li>American Academy of Pediatrics (AAP) medical home educational materials on "Medical Home &amp; Transitions: A Life-Span Process".</li> </ul>	<u>Tertiary</u> <ul style="list-style-type: none"> <li>+ Statutes and regulations mandating transition services.</li> <li>+ Information and education provided at national level.</li> <li>+ Coordination with stakeholders at national level.</li> <li>+ Financial support at federal level for state planning regarding transition to adult life.</li> <li>+ Technical assistance provided at national level.</li> <li>+ Guidelines and protocols for transition at national level.</li> <li>- Programs for adults with special health care needs vary in eligibility criteria which fragments the continuum of services</li> </ul>	YSHCN receive services necessary to transition to adult health care	YSHCN make the transitions to adult life, including adult health care, work, and independence
<u>Secondary Level/Community</u> <ul style="list-style-type: none"> <li>Establish interagency workgroups with physicians, other health care providers, educators (child care -&gt; college), workforce development, business, health care financing, transportation, personal support.</li> <li>Include transition issues in program documentation, quality assurance, outcome measurement, and personnel description/evaluation.</li> <li>Provide education/information to physicians and residents on the medical aspects of pediatric-onset conditions, community resources, developmentally appropriate transition services, etc.</li> <li>Develop network of pediatric and adult medical care providers who offer information/support in caring for YSHCN.</li> <li>Develop and distribute "primers on health insurance" for youths/families in a variety of community settings including schools, parent resource groups, etc.</li> <li>Develop strategies for adult health care, e.g., select adult health care provider, encourage youth/family to visit and interview physician/office staff, have pediatrician remain involved as a "consultant" while the adult health care provider assumes responsibilities, facilitate communication among medical home and specialty providers.</li> <li>Establish best practices/tools to facilitate transition of health care for YSCHN to adult health care providers.</li> </ul>	<u>Secondary Level/Community</u> <p>Primary care providers, care coordinators, etc.:</p> <ul style="list-style-type: none"> <li>- Lack knowledge and skills to transition YSHCN toward adult health care, work, and independence.</li> </ul> <p>Pediatric health care providers:</p> <ul style="list-style-type: none"> <li>- Insufficient time/reimbursement needed to transition YSCHN to adult health care providers.</li> <li>- Do not discuss shift to adult health care provider with YSCHN/family</li> <li>- May not have adequate professional relationships to transition YSCHN to colleagues who are Adult health care providers</li> </ul> <p>Adult health care providers:</p> <ul style="list-style-type: none"> <li>- Insufficient number of adult health care providers who are willing to assume care for YSHCN.</li> <li>- Transition is not defined as a priority by adult health care provider professional organizations which have the influence to set standards and best practices.</li> </ul> <p>Agencies and programs for YSHCN:</p> <ul style="list-style-type: none"> <li>- Agencies who service Adults with special health care needs have a focused service array which address social needs, therefore they lack awareness of health issues and the need to transition to adult health care.</li> <li>- Agencies who serve YSHCN are entitlement and eligibility based, there is no single agency that has the enrollment capacity or advising and supporting all YSHCN through transition</li> </ul>		

<p><u>Primary/Individual Level</u></p> <ul style="list-style-type: none"> <li>• Develop a written health transition plan that includes: proactive wellness (diet, safety, risk reduction), increasing responsibility for self-care and health, transition to adult health care, health care funding options, future plans that may be influenced by health (work, school, recreation, community involvement), preventive care, secondary disabilities. Update plan annually.</li> <li>• Provide information to youth on medical aspects of pediatric-onset conditions, and implications of health condition for adult life.</li> <li>• Advise families of strategies and alternatives to guardianship to facilitate the participation of the family in the youth's the health care</li> <li>• Insure that families have information regarding access to adequate and appropriate health coverage for the YSHCN.</li> <li>• Encourage YSHCN to develop health care skills, e.g., make a list of questions/concerns to ask health care provider, make their own appointments, call in their refill prescriptions, develop a portable medical summary, self-care, involvement in medical therapies. Use health care skill checklist..</li> <li>• Develop strategies for transitioning to adult health care providers, e.g., selection of adult health care provider, encourage youth/family to visit and interview physician/office staff, have pediatrician remain involved as a "consultant" while the adult health care provider assumes responsibilities, facilitate communication among medical home and specialty providers.</li> <li>• Assist YSHCN/families in navigating the system to obtain adult health care services. Provide information on adult health care, e.g., resource packets, at community meetings, at support groups, parent mentoring.</li> </ul>	<p><u>Primary/Individual Level</u></p> <ul style="list-style-type: none"> <li>- YSHCN lack knowledge, skill, and experience needed to manage their own condition and lives, be self-advocates, determine their own lives.</li> <li>- YSHCN/families are not aware of changing needs as youth become adult.</li> <li>- YSCHN/families have difficulty in navigating the system to obtain adult health care services.</li> <li>- YSCHN/families are not prepared for differences in health care, insurance coverage, etc., as youth become adult.</li> </ul>		
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INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<p><u>Tertiary</u> See previous section.</p> <p><u>Secondary Level/Community</u></p> <ul style="list-style-type: none"> <li>• Work with community professionals &amp; families to understand and use “the system.” Promote service focus that includes primary, secondary, tertiary prevention of disabilities; transportation; housing; access to quality health care; affordable insurance; personal care assistants &amp; job supports; assistive technology.</li> <li>• Provide opportunities to assist families to build natural support systems</li> <li>• Coordinate multiple funding streams available for transition services (health, education, business, private organizations).</li> <li>• Develop referral and communication systems that connect youth and families to State and federal government programs for work preparation and employment experiences for youth with disabilities.</li> <li>• Collaborate with the Early Intervention system to help families start early in planning for the future.</li> <li>• Encourage employers to hire youth.</li> <li>• Develop “virtual” one stop centers for transitioning youth (Family Support 360 Project).</li> </ul> <p><u>Primary/Individual Level</u></p> <ul style="list-style-type: none"> <li>• Support skill-building for families, caregivers, and youth, to build competencies and self-confidence in working with issues and agencies for their children and youth with special needs.</li> <li>• Ensure youth/family are aware of IDEA transition requirements that by age 16, IEP must include: appropriate postsecondary goals related to training, education, employment &amp; independent living skills; transition services to assist in reaching those goals, including courses of study.</li> <li>• Connect youth to other youth and adult mentors.</li> <li>• Refer YSHCN to programs that provide work preparation and employment experiences.</li> <li>• Provide benefit counseling services to youth to comprehend the interrelationship between SSI, SSDI, SSP, wages and Medicaid.</li> <li>• Encourage youth to work, volunteer, learn work habits early.</li> <li>• Encourage peer socialization and inclusion in opportunities.</li> <li>• Encourage YSHCN to be aware of their needs, seek help when needed, and advocate to ensure their health needs are met in school.</li> <li>• Help families negotiate the education system (IDEA/IEP/special education, 504, and regular education and accommodation plan).</li> <li>• Mentor children/youth &amp; families in learning lifelong transition skills of proactive planning, problem solving, self-advocacy, negotiation.</li> <li>• Provide information on employment &amp; education, e.g., resource packets, at community meetings.</li> </ul>	<p><u>Tertiary</u> See previous section.</p> <p><u>Secondary Level/Community</u></p> <p>Agencies serving YSHCN:</p> <ul style="list-style-type: none"> <li>- May not provide adequate assistance when referring to other agencies.</li> <li>- May not have adequate knowledge of other services of other agencies.</li> <li>- Services between agencies may not be coordinated.</li> </ul> <p>Higher education institutions may not provide adequate supports for youth with disabilities.</p> <p>Employers:</p> <ul style="list-style-type: none"> <li>- May not be interested in employing youths with disabilities.</li> <li>- May not provide adequate supports for youth with disabilities.</li> <li>- May not receive adequate supports to accommodate youth with disabilities (ADA compliance, job carving, job coaches, etc.)</li> </ul> <p><u>Primary/Individual Level</u></p> <p>YSHCN:</p> <ul style="list-style-type: none"> <li>- May not have developed skills needed for transition to higher education or employment.</li> <li>- May not have received vocational services or career/higher education counseling.</li> <li>- May not be aware of available resources for to support youth in education or employment.</li> </ul> <p>Families:</p> <ul style="list-style-type: none"> <li>- Lack understanding of changing needs as youth becomes adult.</li> <li>- Lack knowledge or skills to assist youth in developing skills needed for high education and employment.</li> <li>- Lack knowledge of available resources for YSCHN as they became adults.</li> </ul> <p>Programs:</p> <ul style="list-style-type: none"> <li>- Lack of appropriate or timely referrals and or coordination between agencies (VR and Medicaid Waiver) allow for YSHCN to be lost in the system.</li> <li>- Department of Education.</li> <li>- Lack of consistent, systematic training for families at the age of transition fosters misinformation and knowledge disparity.</li> </ul>	<p>YSHCN receive services necessary to transition to employment</p>	<p>YSHCN make the transitions to adult life, including adult health care, work, and independence</p>

INTERVENTIONS	DETERMINANTS	BEHAVIOR	GOAL
<u>Tertiary</u> <i>See previous section.</i>	<u>Tertiary</u> <i>See previous section.</i>	YSHCN receive services necessary to transition to independence	YSHCN make the transitions to adult life, including adult health care, work, and independence
<u>Secondary Level/Community</u> <ul style="list-style-type: none"> <li>Collaborate with and refer to state and federally funded agencies providing independent living training, transportation, and assistive technology services.</li> <li>Families serve on Advisory and Planning Committees to focus on global and local issues in transition.</li> <li>Collaborate with family and youth leadership organizations: Encourage and provide connections that will build competencies and self-confidence in working with issues and agencies for their children and their special needs. Mentor youth leaders as they serve on policy councils.</li> <li>Establish youth advisory committees, to give YSHCN the opportunity to build leadership skills, so that they can become spokespeople for youth with health, work, education, and social service professionals.</li> </ul>	<u>Secondary Level/Community</u> State/community agencies: <ul style="list-style-type: none"> <li>May not be assisting YSHCN to develop the skills needed for independence.</li> <li>May not be assisting YSHCN to work toward independence.</li> <li>May not be assisting YSHCN to dream of their future life, and take the necessary steps to achieve their dream.</li> </ul>		
<u>Primary/Individual Level</u> <ul style="list-style-type: none"> <li>Encourage youth to be involved in independence building and work experiences. Connect youth with Scouts, Winners at Work, Special Olympics, local parks and recreation programs and other independence and social skill building organizations.</li> <li>Be aware and access appropriate resources and services such as: school to work, ticket to work, school or job training opportunities, centers for independent living, housing, transportation, recreation and social activities, mental health supports, personal care attendants, scholarships, Vocational Rehabilitation, Supplemental Security Income (SSI), home and community-based waivers, vocational rehabilitation.</li> <li>Encourage role/responsibilities in family's home (chores, pet care, etc).</li> <li>Increase YSHCN involvement in decision making</li> <li>Ask child/youth what he or she wants to do when grown up (dreams, jobs, relationships, etc). Support his or her aspirations.</li> <li>Discuss legal transition at 18 years from minor to adult rights without support/with support. Review guardianship options (full, partial, total independence, surrogate decision maker, and or durable power of attorney).</li> <li>Encourage parent-child interactions that encourage independence, beginning in early childhood.</li> <li>Provide opportunities for family support to assist families in adjusting and celebrating their child's independence.</li> <li>Provide information on independent living; e.g., resource packets, at community meetings.</li> </ul>	<u>Primary/Individual Level</u> YSHCN: <ul style="list-style-type: none"> <li>May not have skills of proactive planning, problem solving, self-advocacy, and negotiation needed for transition to independence.</li> <li>May not be aware of resources and services to assist them in working toward independence.</li> </ul> Families: <ul style="list-style-type: none"> <li>May not know how to assist youth in developing skills needed for independence.</li> <li>May not be aware of resources and services to assist their youth in working toward independence.</li> </ul>		

+ *Protective factor*    - *Risk factor*

**Adolescent Chlamydia Logic Model: Existing Interventions, Influences Factors & Behaviors**

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<p>STD prevention and risk reduction counseling</p> <p>Education of students through schools, clinics, non-school hour activities, media</p> <ul style="list-style-type: none"> <li>• Dangers of older romantic partner</li> <li>• Behaviors that put them at risk for chlamydia</li> <li>• Long term consequences of chlamydia</li> <li>• More teens are waiting to initiate sex</li> </ul> <p>Education of parents through schools, clinics, workplace info sessions, media</p> <p>Teacher training through UH and DOE to utilize "Reducing the Risk" and "Making a Difference" curricula</p> <p>Counselor training to identify and refer students at risk of STDs</p> <p>Clinic staff training to utilize all opportunities to assess client's STD risk, complete a sexual history, provide anticipatory guidance, prevention and risk reduction counseling</p> <p>Physician training to utilize all opportunities to assess client's STD risk, complete a sexual history, provide anticipatory guidance, prevention and risk reduction counseling</p> <p>Agency staff training for non-school hour activities</p> <p>Media campaigns to get information and prevention messages out</p> <p>Pharmaceutical companies support of efforts with funding, materials, media</p> <p>Programs that encourage connectedness with parents, significant adults, school</p> <p>Programs to reduce alcohol and substance use among adolescents</p> <p>Programs to reduce sexual pressure, coercion, sexual abuse</p>	<p><b><u>Tertiary Level</u></b></p> <p><u>SES</u></p> <ul style="list-style-type: none"> <li>- Low economic status</li> </ul> <p><u>Training/Education Policies</u></p> <ul style="list-style-type: none"> <li>+ Training for teachers, social workers</li> <li>+ Gov't tobacco initiative has provided teacher training</li> <li>- Lack of adequate training for psychologists, human service workers, healthcare providers, counselors, graduate level for primary care physicians, agency staff for non-school hours, and school counselors</li> </ul> <p><u>Government</u></p> <ul style="list-style-type: none"> <li>+/- Gov't abstinence initiatives</li> </ul> <p><u>Healthcare Policies</u></p> <ul style="list-style-type: none"> <li>+ CHCs provide more comprehensive care than many other healthcare providers</li> <li>+ Transition of adolescents from pediatrician to OB-GYN or adolescent specialist to improve healthcare for adolescents (e.g., Kaiser model)</li> <li>+ Insurance coverage</li> </ul> <p><b><u>Secondary/Community Level</u></b></p> <p><u>Nuclear Family</u></p> <ul style="list-style-type: none"> <li>+/- How family deals with sexuality of children may be different by culture</li> <li>+ Greater closeness and connectedness to parents</li> <li>+ More appropriate parental supervision and monitoring</li> <li>+ Parents monitor adolescents' activities</li> <li>+ Lives with biological parents</li> <li>+ Increase in maternal and paternal education</li> <li>+ Increase in morning presence of either parent</li> <li>+ For 8<sup>th</sup> and 9<sup>th</sup> graders, close relationship with mother</li> <li>+ For 10<sup>th</sup> and 11<sup>th</sup> graders, <u>boys</u> who have a close relationship with mother, not significant for girls</li> <li>- Adolescents of mothers who gave birth as teens are more likely to initiate sex early</li> </ul>	<p>Key Behavior #1</p> <p><b>Delay onset of sexual intercourse</b></p>	<p><b>Reduce Adolescent Chlamydia</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><b><u>Secondary/Community Level</u></b> <i>(continued)</i></p> <ul style="list-style-type: none"> <li>- Adolescents with sexually experienced or pregnant siblings are more likely to initiate sex early</li> </ul> <p><u>Community Networks</u></p> <p><u>Neighborhood</u></p> <ul style="list-style-type: none"> <li>- Neighborhood has high unemployment</li> </ul> <p><u>Media</u></p> <ul style="list-style-type: none"> <li>+ Media campaigns have had success in bringing about positive health behaviors, e.g., low-fat milk</li> </ul> <p><u>School</u></p> <ul style="list-style-type: none"> <li>+ Connectedness to school, attends regularly, does well</li> <li>+ Peers are high achievers, strong educational aspirations, and avoid other risk-taking behaviors</li> <li>+ Perceive school is safe</li> <li>+ low percentage of low-income students</li> <li>+ use curricula that have been evaluated well and show a significant positive behavioral outcomes</li> </ul> <p><u>Healthcare provider</u></p> <ul style="list-style-type: none"> <li>+ Anticipatory guidance</li> </ul> <p><b><u>Primary/Individual Level</u></b></p> <p><u>Cognitive</u></p> <ul style="list-style-type: none"> <li>- Lack of knowledge of long-term consequences of chlamydia, e.g., PID, infertility, etc.</li> </ul> <p><u>Health Behaviors</u></p> <ul style="list-style-type: none"> <li>+ Females go to healthcare providers</li> <li>+ Females who participate in sports delay first sex</li> <li>- Males do not go to healthcare providers</li> </ul> <p><u>Problem or risk-taking behaviors</u></p> <ul style="list-style-type: none"> <li>- Alcohol/drug use</li> </ul>	<p>Key Behavior #1 <i>(continued)</i></p> <p><b>Delay onset of sexual intercourse</b></p>	<b>Reduce Adolescent Chlamydia</b>



Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><u><b>Primary/Individual Level</b></u> <i>(continued)</i></p> <p><u>Sexual beliefs, attitudes, skills and behaviors</u></p> <ul style="list-style-type: none"><li>- Teens who believe their peers are sexually active are more likely to become sexually active</li><li>+/- Teens who make virginity pledges are more likely to delay onset of sexual intercourse but when they become sexually active, less likely to use protection</li><li>- Older romantic partner</li><li>+ Over time (1988-2002) more teens are waiting to initiate sex</li></ul> <p><u>Sexual Abuse</u></p> <ul style="list-style-type: none"><li>- Sexual pressure, coercion and abuse</li></ul>	<p>Key Behavior #1 <i>(continued)</i></p> <p><b>Delay onset of sexual intercourse</b></p>	<p>Reduce <b>Adolescent Chlamydia</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><b><u>Tertiary Level</u></b></p> <p><u>SES Factors</u></p> <p><u>Training/Education Policies</u></p> <p><u>Health Care Policies</u></p> <p><u>Government</u></p> <p>- Abstinence initiatives</p> <p><b><u>Secondary/Community Level</u></b></p> <p><u>Family</u></p> <p><u>Community Networks</u></p> <p><u>Health Care Provider Factors</u></p> <p>+ Brief intervention that gave clear message about appropriate sexual and condom behavior and included one-on-one consultation about the client's own behavior.</p> <p><u>School</u></p> <p>+ Received comprehensive sex education</p> <p><b><u>Primary/Individual Level</u></b></p> <p><u>Health Behaviors</u></p> <p><u>Cognitive</u></p> <p>- Lack of understanding that she/he has chlamydia because no symptoms are experienced</p> <p>- Lack of knowledge of long-term consequences of chlamydia, e.g., PID, infertility, etc.</p> <p><u>Teen Relationship with partner(s)</u></p> <p>+ Discussed condom use, reasons to use</p> <p><u>Problem or risk-taking behaviors</u></p> <p>- Alcohol/drug use</p>	<p>Key Behavior #2</p> <p><b>Increase use of condoms</b></p>	<p><b>Reduce Adolescent Chlamydia</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><b><u>Primary/Individual Level</u></b> <i>(continued)</i></p> <p><u>Sexual beliefs, attitudes, skills and behaviors</u></p> <ul style="list-style-type: none"><li>- Denial of being sexually active</li><li>- Denial of having STDs</li><li>- Multiple partners</li><li>- Partners have other partners</li><li>- Belief that condoms don't work</li><li>- Perceive risk is low</li></ul> <p>+ Increased condom use by teens over the years</p> <p>+ Increase use of condoms at first sex</p> <p><u>Sexual Abuse</u></p> <p>Sexual pressure, coercion and abuse</p>	<p>Key Behavior #2</p> <p><b>Increase use of condoms</b></p>	<p><b>Reduce Adolescent Chlamydia</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><b><u>Tertiary Level</u></b></p> <p><u>SES Factors</u></p> <p><u>Education Policies</u></p> <ul style="list-style-type: none"> <li>+DOE has training for teachers, social workers</li> <li>+ Gov't tobacco initiative has provided teacher training</li> <li>- Lack of adequate training for psychologists, human service workers, healthcare providers, counselors, graduate level for primary care physicians, agency staff for non-school hours, and school counselors</li> </ul> <p><u>Economic</u></p> <p><u>Government</u></p> <ul style="list-style-type: none"> <li>+/- Gov't abstinence initiatives</li> </ul> <p><b><u>Secondary/Community Level</u></b></p> <p><u>Family</u></p> <ul style="list-style-type: none"> <li>+/- How family deals with sexuality of children may be different by culture, e.g., Micronesians</li> </ul> <p><u>Community Networks</u></p> <ul style="list-style-type: none"> <li>+ Use media to get messages out. Media campaigns have had success in bringing about positive health behaviors, e.g., low-fat milk</li> </ul> <p><u>Health Care Provider Factors</u></p> <ul style="list-style-type: none"> <li>+ CHCs provide more comprehensive care than many other healthcare providers</li> <li>+ Transition of adolescents from pediatrician to OB-GYN or adolescent specialist to improve healthcare for adolescents (e.g., Kaiser model)</li> <li>+ Insurance coverage</li> </ul> <p><u>School</u></p>	<p>Key Behavior #3</p> <p><b>Reduce Frequency of sex among sexually active</b></p>	<b>Reduce Adolescent Chlamydia</b>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><b><u>Primary/Individual Level</u></b></p> <p><u>Cognitive</u> + Understand the risks of adolescent sexual activity</p> <p><u>Health Behaviors</u></p> <p><u>Problem or risk-taking behaviors</u></p> <p><u>Sexual beliefs, attitudes, skills &amp; behaviors</u> - Denial of being sexually active - Multiple partners - “Friends with Benefits”</p> <p><u>Sexual Abuse</u> - Sexual pressure, coercion and abuse</p>	<p>Key Behavior #3 <i>(continued)</i></p> <p><b>Reduce Frequency of sex among sexually active</b></p>	<p><b>Reduce Adolescent Chlamydia</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<p>Screen all sexually active women &lt; 25 y.o. by SOH STD Clinic, private providers, CHCs, juvenile detention, youth corrections</p> <p>Treat index patient who tests positive for chlamydia</p> <p>Notify and/or locate partner(s) and provide treatment</p> <p>Provide partner delivered treatment</p> <p>On neighbor islands, provide referral to services</p> <p>Ensure all have health insurance</p> <p>Ensure health insurance covers screening and treatment</p>	<p><b><u>Tertiary Level</u></b></p> <p><u>SES Factors</u></p> <p><u>Education</u></p> <p><u>Government Policies</u></p> <ul style="list-style-type: none"> <li>- Lack of adequate bus transportation</li> <li>- Both federal and state funding for STDs have been level, resulting in reduced screening due to increased costs</li> <li>- Unable to get denominator (# of chlamydia tests done by private labs)</li> </ul> <p><u>Health Care Policies</u></p> <ul style="list-style-type: none"> <li>+ Subsidized FP clinics as a resource</li> <li>+ CHC provide more comprehensive care than many other healthcare providers</li> <li>+ Insurance coverage</li> <li>+ CDC screening guidelines</li> </ul> <p><b><u>Secondary/Community Level</u></b></p> <p><u>Family</u></p> <p><u>Community Networks</u></p> <p><u>School</u></p> <ul style="list-style-type: none"> <li>- Inadequate comprehensive sex education</li> </ul> <p><u>Health Care Provider Issues</u></p> <ul style="list-style-type: none"> <li>- Not all providers are consistently screening per screening guidelines</li> <li>- Not all providers are screening males</li> <li>- Not all providers are doing sexual history</li> </ul> <p><i>(Individual factors for Key Behavior 4 on next page)</i></p>	<p>Key Behavior #4</p> <p><b>Increase Screening &amp; Treatment</b></p>	<p><b>Reduce Adolescent Chlamydia</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 8)	<p><b><u>Primary/Individual Level</u></b></p> <p><u>Cognitive</u></p> <ul style="list-style-type: none"> <li>- Lack of knowledge of how STDs are spread</li> <li>- Lack of understanding that she/he has chlamydia because no symptoms are experienced</li> <li>- Not sure where to get services</li> <li>+ Adolescents know the importance of adhering to screening guidelines</li> </ul> <p><u>Health Behaviors</u></p> <p><u>Problem or risk-taking behaviors</u></p> <p><u>Sexual beliefs, attitudes, skills &amp; behaviors</u></p> <ul style="list-style-type: none"> <li>- Denial of being sexually active</li> <li>- Denial of having STDs</li> <li>- Multiple partners</li> <li>- Partners have other partners</li> <li>- Does not tell partner(s) about being a contact to positive chlamydia, doesn't refer partner(s) for care</li> </ul> <p><u>Sexual Abuse</u></p> <ul style="list-style-type: none"> <li>- Sexual pressure, coercion and abuse</li> </ul>	<p>Key Behavior #4 (continued)</p> <p><b>Increase Screening &amp; Treatment</b></p>	<p><b>Reduce Adolescent Chlamydia</b></p>

### Unintended Pregnancy Logic Model: Existing Interventions, Influences Factors & Behaviors

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<ul style="list-style-type: none"> <li>Community activities strengthen social ties &amp; expand individual support circles</li> <li>Ads &amp; public service announcements for victim support &amp; perpetrator intervention services available</li> <li>Promote health resources for teaching &amp; learning about healthy relationships &amp; effective communication</li> <li>Victim advocacy organizations participate in public health events &amp; advertise in multiple venues to raise awareness &amp; advertise services</li> <li>Collaborative links between police department, judiciary &amp; intervention programs provide comprehensive network of safety &amp; continuum of services</li> <li>Criminal justice system supports &amp; protects victims.</li> <li>Collaborated, coordinated public health efforts incorporate a broad range of disciplines &amp; professionals &amp; deliver a consistent message.</li> <li>Prioritization of violence prevention within DHS ensures all clients entering system are assessed for need &amp; referred appropriately.</li> <li>Service agencies feature hours of operation &amp; location/method of service delivery that are congruent to the needs of the target population.</li> <li>Ongoing monitoring &amp; data collection by oversight agencies measure policy/program impact.</li> <li>Media &amp; marketing campaigns counter-balance those promoting casual sex, multiple partners, &amp; female degradation.</li> <li>Programs, social services &amp; community groups seek out &amp; promote strong positive men &amp; women capable of role modeling healthy behaviors</li> </ul>	<p><b><u>Primary/Individual</u></b></p> <p><u>Physical/Environmental Factors</u></p> <ul style="list-style-type: none"> <li>- Childhood sexual abuse</li> <li>- Physical abuse during pregnancy (by family or intimate partner)</li> <li>- Sexual pressure, coercion &amp; abuse (history or current)</li> </ul> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>- Shame/guilt about having sex</li> <li>- Considers only a narrow scope of future outcomes attainable/ realistic</li> </ul> <p><u>Health/Risk-Taking Behaviors</u></p> <ul style="list-style-type: none"> <li>- Viagra/methamphetamine/ ecstasy use</li> <li>- Drug/Alcohol use</li> <li>- Tobacco use</li> </ul> <p><u>Partner/Relationship Dynamics</u></p> <ul style="list-style-type: none"> <li>- Sexual coercion, violence</li> <li>- Older partners</li> <li>- Physical abuse by partner or husband</li> <li>+ Relationship dynamics support shared power &amp; control, equal value given to each partner</li> <li>- Stereotyping/polarization of male partner vs. female partner role within the relationship</li> </ul> <p><b><u>Secondary/Community Level</u></b></p> <p><u>Family Environment</u></p> <ul style="list-style-type: none"> <li>- Sexual coercion within family</li> <li>- Exposure to family violence</li> <li>-/+ Values that create shame/guilt about having sex</li> <li>-/+ Values that create embarrassment if pregnant</li> <li>-/+ Religious values</li> <li>- Religious values that restrict access to sex education &amp; contraceptive methods</li> <li>- Cultural beliefs which consider contraceptive use insulting to male partner or which are otherwise unsupportive of contraceptive use or spacing/planning pregnancies</li> <li>- Family unit headed by single mother</li> <li>- One or both parents absent</li> </ul>	<p>Key Behavior #1</p> <p><b>Decrease unwanted sex</b></p>	<p><b>Reduce unintended pregnancy</b></p>



Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on page 1)	<p><b><u>Secondary/Community Level</u></b> <i>(continued)</i></p> <p><u>Social/Environmental Factors</u></p> <ul style="list-style-type: none"> <li>- Societal normalization &amp; acceptance of older males partnering with much younger females</li> <li>- Availability &amp; abuse of sex enhancing drugs (Viagra, methamphetamine, ecstasy)</li> <li>- Lack of accountability or legal/economic consequences for men who abandon/fail to provide for their children</li> </ul> <p><u>Health Care Provider Issues</u></p> <ul style="list-style-type: none"> <li>+ Access to contraceptives</li> <li>+ Provide accurate information about effective use of contraception</li> </ul> <p><b><u>Tertiary Level</u></b></p> <p><u>Media/Marketing</u></p> <ul style="list-style-type: none"> <li>- Promotion of sex enhancing drugs (Viagra)</li> <li>- Promotion &amp; normalization of early &amp; promiscuous sexual behaviors in mass media (MTV)</li> </ul>	<p>Key Behavior #1 <i>(continued)</i></p> <p><b>Decrease unwanted sex</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<ul style="list-style-type: none"> <li>▪ Case management services to families in crises or at risk for crises</li> <li>▪ Agencies offering relevant services feature hours of operation &amp; location/method of service delivery that are congruent to the needs of the service population.</li> <li>▪ Wide range of life development activities &amp; adult education available through social service &amp; rehab programs, at community colleges &amp; at C&amp;C rec centers broaden individual awareness of available goals &amp; future outcomes.</li> <li>▪ Education &amp; outreach that incorporates community leaders &amp; other members of influence in the intended service population</li> <li>▪ Prioritization of family planning as an issue within DHS ensures all clients entering system are assessed for need &amp; referred appropriately.</li> <li>▪ Community activities strengthen social ties &amp; expand individual support circles</li> <li>▪ Incorporation of sexuality education component into other adult education &amp; support programs (WIC, Healthy Start, Pu'uhonua)</li> <li>▪ Media &amp; marketing campaigns to counter or balance those offering easy sexuality, multiple partners, &amp; female degradation.</li> <li>▪ Programs, social services &amp; community groups seek out &amp; promote strong positive men &amp; women capable of role modeling healthy behaviors</li> </ul>	<p><b><u>Primary/Individual Level</u></b></p> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>- Externalized locus of control</li> <li>+ Values post high school education</li> </ul> <p><u>Cognitive Factors</u></p> <ul style="list-style-type: none"> <li>+ Comprehensive sex education</li> <li>- Education (&lt; than 12 years)</li> <li>- Awareness that there are few economic/legal consequences to abandoning or failing to provide for children they've fathered (for men)</li> <li>+ Awareness that there are few economic/legal consequences for men who abandon or fail to provide for children they've fathered (for women)</li> </ul> <p><u>Family Environment</u></p> <ul style="list-style-type: none"> <li>- Family unit headed by single mother</li> <li>- One or both parents absent</li> </ul> <p><u>Healthy Practices/Risk-taking Behavior</u></p> <ul style="list-style-type: none"> <li>-/+ Delayed first sexual contact</li> <li>+ Abstinence</li> </ul> <p><b><u>Secondary Level/Community Factors</u></b></p> <p><u>Family Environment</u></p> <ul style="list-style-type: none"> <li>-/+ Values that create shame/guilt about having sex or being pregnant</li> </ul> <p><u>Social/Environmental Factors</u></p> <ul style="list-style-type: none"> <li>- Lack of accountability or legal/economic consequences for men who abandon/fail to provide for their children</li> <li>- No social stigma attached to unmarried pregnancy</li> <li>- Community &amp; society supportive of unmarried pregnancy</li> <li>- Awareness that there are few economic/legal consequences to abandoning or failing to provide for children they've fathered (for men)</li> </ul>	<p>Key Behavior #2</p> <p><b>Increase personal responsibility</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on previous page))	<p><u>Social/Environmental Factors</u> (continued)</p> <ul style="list-style-type: none"> <li>+ Awareness that there are few economic/legal consequences for men who abandon or fail to provide for children they've fathered (for women)</li> </ul> <p><u>Health Care Provider Issues</u></p> <ul style="list-style-type: none"> <li>+ Access to contraceptives</li> <li>- Lack of health care providers</li> </ul> <p><b><u>Tertiary Level</u></b></p> <p><u>Media/Marketing</u></p> <ul style="list-style-type: none"> <li>- Promotion of sex enhancing drugs (Viagra)</li> </ul> <p><u>Social Norms</u></p> <ul style="list-style-type: none"> <li>- Promotion &amp; normalization of unmarried pregnancy</li> <li>+ Promotion of religious values that discourage permissive sex &amp; support postponing first sexual contact</li> <li>- Lack of accountability or legal/economic consequences for men who abandon/fail to provide for their children</li> <li>- Welfare system unsupportive of marriage &amp; two-parent families, provides disincentives to working outside the home, &amp; reduces benefits to families with children over 3yo.</li> <li>- Cultural beliefs which consider contraceptive use insulting to male partner or which are otherwise unsupportive of contraceptive use or spacing/planning pregnancies</li> </ul>	<p>Key Behavior #2 <i>(continued)</i></p> <p><b>Increase personal responsibility</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<ul style="list-style-type: none"> <li>▪ Case management &amp; support services to families in crises or at risk for crises</li> <li>▪ Agencies offering relevant services feature hours of operation &amp; location/method of service delivery that are congruent to the needs of the service population.</li> <li>▪ Wide range of life development activities &amp; adult education available through social service &amp; rehabilitation programs, at community colleges &amp; at county recreation centers broaden individual awareness of available goals &amp; future outcomes.</li> <li>▪ Advertisements &amp; public service announcements for family planning services available to families &amp; individuals that reach the target population</li> <li>▪ Incorporation of sexuality education component into other adult education &amp; support programs (WIC, Healthy Start, Pu'u honua)</li> </ul>	<p><b><u>Primary/Individual Level</u></b></p> <p><u>Physical/Environmental Factors</u></p> <ul style="list-style-type: none"> <li>- Age (35 plus)</li> <li>- Childhood sexual abuse</li> </ul> <p><u>Partner/Relationship Dynamics</u></p> <ul style="list-style-type: none"> <li>- Sexual pressure, coercion &amp; abuse (history or current)</li> <li>+ Relationship dynamics support shared power &amp; control, equal value given to each partner</li> </ul> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>+ Values post high school education</li> <li>- Discomfort with pelvic exams</li> <li>- Externalized locus of control</li> <li>- Awareness that there are few economic/legal consequences to abandoning or failing to provide for children they've fathered (for men)</li> <li>+ Awareness that there are few economic/legal consequences for men who abandon or fail to provide for children they've fathered (for women)</li> <li>- Shame/guilt about having sex</li> <li>- Considers only a narrow scope of future outcomes attainable/ realistic</li> </ul> <p><u>Healthy Practices/ Risk-taking</u></p> <ul style="list-style-type: none"> <li>- Drug/Alcohol use</li> <li>- Tobacco use</li> <li>- History of unprotected sex</li> <li>- Viagra/methamphetamine/ ecstasy use</li> </ul> <p><u>Cognitive Factors</u></p> <ul style="list-style-type: none"> <li>+ Comprehensive sex education</li> <li>- Education (&lt; than 12 years)</li> </ul>	<p>Key Behavior #3</p> <p><b>Increase planned pregnancy</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<ul style="list-style-type: none"> <li>▪ Subsidized FP services are available to low income &amp; uninsured clients throughout the state at more than 40 clinics &amp; doctor's offices.</li> <li>▪ Advertisements or public service announcements for family planning services available to families &amp; individuals that reach the target population</li> <li>▪ Prioritization of family planning as an issue within DHS ensures all clients entering system are assessed for need &amp; referred appropriately.</li> <li>▪ Annual women's health conference &amp; other professional specific continuing education events offer training &amp; increase awareness of FP issues</li> </ul> <ul style="list-style-type: none"> <li>▪ Collaborated, coordinated public health efforts incorporate a broad range of disciplines &amp; professionals &amp; deliver a consistent message.</li> <li>▪ Incorporation of sexuality education component into other adult education &amp; support programs (WIC, Healthy Start, Pu'uhonua)</li> <li>▪ Prioritization of family planning as an issue within DHS ensures all clients entering system are assessed for need &amp; referred appropriately.</li> <li>▪ Provision of funding for public service announcements and advertising which raise public awareness of available family planning services</li> <li>▪ Comprehensive health education policy In place at DOE</li> </ul>	<p><b><u>Secondary Level/Community Factors</u></b></p> <p><u>Family Environment</u></p> <ul style="list-style-type: none"> <li>- Low levels of family interaction &amp; communication due to dysfunction (drug abuse, violence, etc) &amp;/or non-dysfunctional reasons (employment at one or more jobs outside the home)</li> </ul> <p><u>Social/Environmental Factors</u></p> <ul style="list-style-type: none"> <li>- Availability &amp; abuse of sex enhancing drugs (Viagra, methamphetamine, ecstasy)</li> <li>- Community &amp; society support unmarried pregnancy</li> <li>- No social stigma attached to unmarried pregnancy</li> </ul> <p><u>Health Care Provider Issues</u></p> <ul style="list-style-type: none"> <li>+ Access to contraceptives</li> <li>+ Provide accurate information about effective use of contraception</li> <li>+ Select appropriate contraceptive method for user</li> <li>- Difficulty of using non-hormonal contraceptives</li> <li>- Discomfort with pelvic exams</li> <li>- Lack of health care providers</li> <li>- Lack of comprehensive family planning training for MDs</li> </ul> <p><b><u>Tertiary Level/Policies &amp; Standards</u></b></p> <p><u>Media/Marketing</u></p> <ul style="list-style-type: none"> <li>- Promotion of sex enhancing drugs (Viagra)</li> <li>-/+ Promotion of religious values that discourage permissive sex, encourage postponing sex</li> </ul> <p><u>Health Care Policy</u></p> <ul style="list-style-type: none"> <li>+ Policies that promote greater contraceptive access to a range of effective methods</li> <li>+ Policies that provide greater health insurance coverage</li> <li>- Lack of comprehensive family planning training for MDs</li> <li>+ Programs that ensure target populations are aware of the services available</li> </ul>	<p>Key Behavior #3 <i>(continued)</i></p> <p><b>Increase planned pregnancy</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on previous page)	<p><u>Social Norms</u></p> <ul style="list-style-type: none"> <li>- Promotion &amp; normalization of unmarried pregnancy</li> <li>+ Promotion of religious values that discourage permissive sex &amp; support postponing first sexual contact</li> <li>- Lack of accountability or legal/economic consequences for men who abandon/fail to provide for their children</li> <li>- Welfare system does not support marriage or two-parent families, provides disincentives to women who work outside the home, &amp; reduces benefits to families with children over 3yo.</li> <li>- No social stigma attached to unmarried pregnancy</li> <li>- Cultural beliefs which consider contraceptive use insulting to male partner or which are otherwise unsupportive of contraceptive use or spacing/planning pregnancies</li> </ul> <p><u>Education Policy</u></p> <ul style="list-style-type: none"> <li>- Abstinence-only education programs</li> <li>+ Age-appropriate comprehensive sexual education beginning in elementary school &amp; continuing throughout the reproductive life span</li> </ul>	<p>Key Behavior #3 <i>(continued)</i></p> <p><b>Increase planned pregnancy</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
<ul style="list-style-type: none"> <li>Promote health resources for teaching &amp; learning about healthy relationships &amp; effective communication</li> <li>Collaborated, coordinated public health efforts incorporate a broad range of disciplines &amp; professionals &amp; deliver a consistent message.</li> <li>Wide range of life development activities &amp; adult education available through social service &amp; rehabilitation programs, at community colleges &amp; at county recreation centers broaden individual awareness of available goals &amp; future outcomes.</li> <li>Advertisements or public service announcements for family planning services available to families &amp; individuals that reach the target population</li> <li>Prioritization of family planning as an issue within DHS ensures all clients entering system are assessed for need &amp; referred appropriately.</li> <li>Agencies offering relevant services feature hours of operation &amp; location/method of service delivery that are congruent to the needs of the service population.</li> <li>Case management &amp; support services to families in crises or at risk for crises</li> <li>Incorporation of sexuality education component into other adult education &amp; support programs (WIC, Healthy Start, Pu'u honua)</li> <li>Subsidized FP services are available to low income &amp; uninsured clients throughout the state at more than 40 clinics &amp; doctor's offices.</li> <li>Annual women's health conference &amp; other professional specific continuing education events offer training &amp; increase awareness of FP issues</li> </ul>	<p><b><u>Primary Level/Individual Factors:</u></b></p> <p><u>Physical/Environmental Factors</u></p> <ul style="list-style-type: none"> <li>+ Effective, consistent use of effective contraceptives</li> <li>- Physical abuse by family or intimate partner</li> <li>- Sexual pressure, coercion &amp; abuse (history or current)</li> </ul> <p><u>Psychological Factors</u></p> <ul style="list-style-type: none"> <li>- Cultural beliefs not supportive of contraceptive use or spacing/planning pregnancies</li> <li>- Shame/discomfort with body functions</li> <li>- Denial/minimization of pregnancy risk</li> <li>- Shame/guilt about having sex</li> <li>+ Values post high school education</li> <li>- Discomfort with pelvic exams</li> <li>- Externalized locus of control</li> </ul> <p><u>Cognitive Factors</u></p> <ul style="list-style-type: none"> <li>- Reproductive myths</li> <li>+ Knowledge about effective use of contraception</li> <li>+ Accurate information about reproductive health</li> <li>- Lack of critical thinking</li> <li>- Awareness that there are few economic/legal consequences to abandoning or failing to provide for children they've fathered (for men)</li> <li>+ Awareness that there are few economic/legal consequences for men who abandon or fail to provide for children they've fathered (for women)</li> <li>+ Comprehensive sex education</li> <li>- Education (&lt; than 12 years)</li> </ul> <p><u>Healthy Practices/ Risk-taking Behaviors</u></p> <ul style="list-style-type: none"> <li>- Drug/Alcohol use</li> <li>- Tobacco use</li> <li>- History of unprotected sex</li> <li>- Viagra/methamphetamine/ ecstasy use</li> </ul>	<p>Key Behavior #4</p> <p><b>Increase Effective Use of appropriate contraception</b></p>	<p><b>Reduce unintended pregnancy</b></p>

Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on previous page)	<p><u>Partner/Relationship Dynamics</u></p> <ul style="list-style-type: none"> <li>- Stereotyping/polarization of male partner vs. female partner relationship roles</li> <li>- Sexual coercion, violence</li> <li>- One partner is much older than the other</li> <li>+ Relationship dynamics support shared power &amp; control, equal value given to each partner</li> </ul> <p><u>Secondary Level/Community Factors</u></p> <p><u>Family Environment</u></p> <ul style="list-style-type: none"> <li>- Lack of insurance coverage</li> <li>- Low income</li> <li>-/+ Values that create shame/guilt about having sex</li> <li>-/+ Values that create embarrassment if pregnant</li> <li>-/+ Religious values</li> <li>- Religious values that restrict access to sex education &amp; contraceptive methods</li> <li>- Cultural beliefs which consider contraceptive use insulting to male partner or which are otherwise unsupportive of contraceptive use or spacing/planning pregnancies</li> <li>- Low levels of family interaction &amp; communication due to dysfunction (drug abuse, violence, etc) &amp;/or non-dysfunctional reasons (employment at one or more jobs outside the home)</li> </ul> <p><u>Social/Environment Factors</u></p> <ul style="list-style-type: none"> <li>- Poverty-level subsistence in communities</li> <li>- Availability &amp; abuse of sex enhancing drugs (Viagra, methamphetamine, ecstasy)</li> <li>- Lack of accountability or legal/economic consequences for men who abandon/fail to provide for their children</li> <li>- Societal normalization &amp; acceptance of older males partnering with much younger females</li> </ul>	<p>Key Behavior #4 (continued)</p> <p><b>Increase Effective Use of appropriate contraception</b></p>	<p><b>Reduce unintended pregnancy</b></p>



Existing Interventions	Influencing Factors in Different Domains	Behaviors	Goal
(See list of interventions on previous page)	<p><b><u>Tertiary Level/Policies &amp; Standards</u></b></p> <p><u>Media/Marketing</u></p> <ul style="list-style-type: none"> <li>- Promotion of sex enhancing drugs (Viagra)</li> <li>-/+ Promotion of religious values that discourage permissive sex, postpone sex</li> <li>- Promotion &amp; normalization of early &amp; promiscuous sexual behaviors in mass media (MTV)</li> </ul> <p><u>Social Norms</u></p> <ul style="list-style-type: none"> <li>- Promotion &amp; normalization of unmarried pregnancy</li> <li>- Lack of accountability or legal/economic consequences for men who abandon/fail to provide for their children</li> <li>-Welfare system does not support marriage or two-parent families, provides disincentives to women who work outside the home, &amp; reduces benefits to families with children over 3yo.</li> <li>- Cultural beliefs which consider contraceptive use insulting to male partner or which are otherwise unsupportive of contraceptive use or spacing/planning pregnancies</li> </ul> <p><u>Health Care Policy</u></p> <ul style="list-style-type: none"> <li>+ Policies that promote greater contraceptive access to a range of effective methods</li> <li>+ Policies that provide greater health insurance coverage</li> <li>- Lack of comprehensive family planning training for MDs</li> <li>+ Programs that ensure target populations are aware of the services available</li> </ul> <p><u>Education Policy</u></p> <ul style="list-style-type: none"> <li>- Abstinence-only education programs</li> <li>+ Age-appropriate comprehensive sexual education beginning in elementary school &amp; continuing throughout the reproductive life span</li> </ul>	<p>Key Behavior #4 (continued)</p> <p><b>Increase Effective Use of appropriate contraception</b></p>	<p><b>Reduce unintended pregnancy</b></p>

## ***A Family View Of Children with Special Health Care Needs Hawaii 2001***

### **Hawaii Data from the National Survey of Children with Special Health Care Needs**

Children with Special Health Needs Branch  
Family Health Services Division  
Hawaii Department of Health

#### ***How Are Children with Special Health Care Needs Faring in Hawaii?***

- 52% families of CSHCN partner in decision-making at all levels, and are satisfied with the services they receive.
- 48% CSHCN receive coordinated, ongoing, comprehensive care within a medical home.
- 70% CSHCN have adequate private and/or public insurance to pay for the services they need.
- 69% CSHCN/families report that community-based service systems are organized so families can use them easily.
- 5% youth with special health care needs receive the services necessary to make transitions to adult life, including adult health care, work, and independence.

*Children with special health care needs are children who have or are at increased risk for chronic physical, developmental, behavioral, or emotional conditions, and require health and related services of a type or amount beyond that generally required by children.*

Definition from Maternal and Child Health Bureau,  
U.S. Dept. Health and Human Services,  
and American Academy of Pediatrics



Hawaii data from the National Survey for Children with Special Health Care Needs (CSHCN) provide information on five of the six national outcomes for CSHCN. These outcomes were established as part of the national action plan to achieve community-based service systems for CSHCN and their families (*Measuring Success for Healthy People 2010: A working document, 1999*).

The survey assesses the prevalence and impact of special health care needs among children, and provides a family view of health issues and challenges for CSHCN and their families.

Data show a need to improve outcomes for CSHCN in Hawaii.

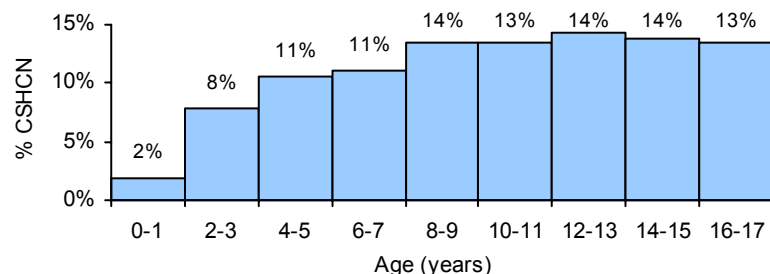
## ***National Survey of CSHCN***

- The National Survey of CSHCN was sponsored by the Maternal and Child Health Bureau, Health Resources and Services Administration, and Office of Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services.
- The National Center for Health Statistics conducted the survey from October 2000-April 2002.
- The survey was population-based, using random-digit-dial sampling. Telephone and/or written interviews were conducted in English, Spanish, Cantonese, Japanese, Korean, Mandarin, Tagalog, Vietnamese, and other languages.
- In each state, approximately 750 CSHCN under age 18 years were identified using criteria that crossed diverse health care needs. CSHCN were children who had a medical, behavioral, or other health condition that has lasted or is expected to last 12 months or longer, and met one or more of the following:
  - increased use of medical care, mental health, or educational services
  - need for prescription medicines
  - limited ability to do things
  - need for special therapy
  - need for treatment/counseling for an emotional, developmental, or behavioral problem
- State data were weighted for the entire CSHCN population.
- Hawaii data were analyzed by the Children with Special Health Needs Branch, Hawaii Department of Health. Outcomes were determined according to the method established by the Maternal and Child Health Bureau, which counted only children who met all applicable indicators as achieving the outcome.

## ***Hawaii Data from the National Survey of CSHCN***

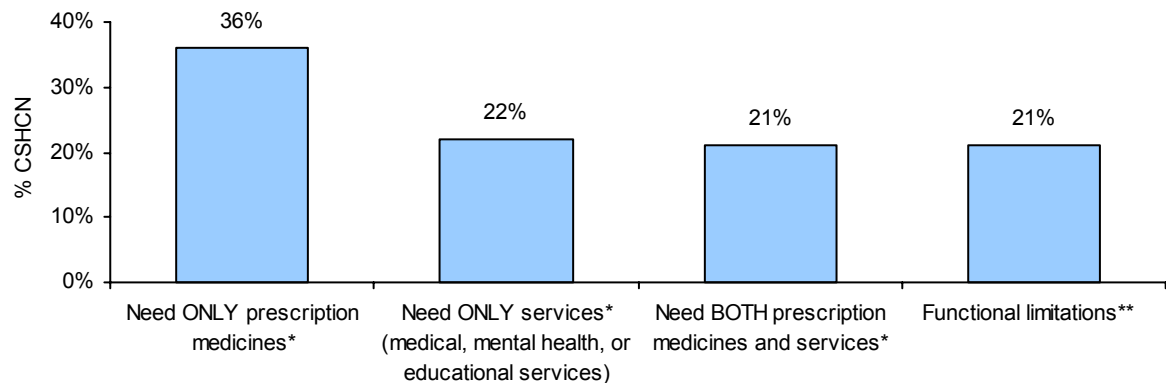
### ***Who are children with special health care needs?***

- Hawaii has approximately 32,500 CSHCN age 0-17 years. They comprise 11% of all Hawaii children.
- Approximately 25,300 households have at least one child with special health care needs. They comprise 16% of households with children.
- A greater proportion of CSHCN are in the older ages. *This may reflect increasing identification and/or development of special health needs with age.*



- There are more males (59%) with special health care needs, compared to females (41%).
- Over half of the CSHCN are in families with income under 300% federal poverty level (FPL). By income:
  - 20% families had income less than 200% FPL.
  - 38% families had income 201-300% FPL.
  - 42% families had income over 300% FPL.

- *Special health care needs by subgroups<sup>2</sup>*: For CSHCN who have medical, behavioral, or other health conditions that have lasted or are expected to last 12 months or longer:

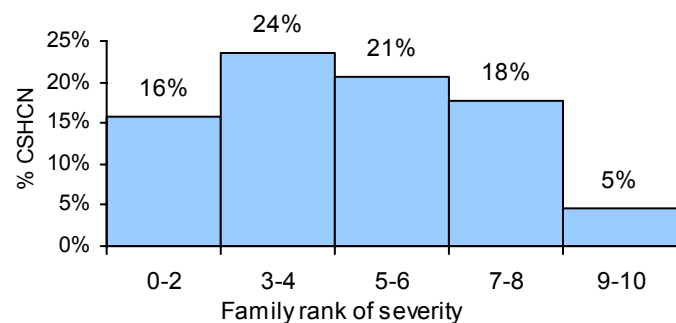


\* No functional limitations.

\*\* Limited in ability to do things most children of the same age can do. This subgroup includes children with functional limitations who also need prescription medicines and/or more services.

- *Severity*: Families ranked their children's conditions or problems on a scale from 0-10, with 10 as the most severe.

- 45% CSHCN had moderate conditions or problems (rank 3-6).
- 23% CSHCN had severe conditions or problems (rank 7-10).



## What do families say about being effective partners?

### Outcome measure

**52% CSHCN/families partner in decision-making at all levels and are satisfied with the services they receive.<sup>3</sup>**

- 81% CSHCN/families say that their doctors usually or always made the family feel like a partner.
- 55% CSHCN/families were very satisfied with the services received. 32% were somewhat satisfied.

### **2010 National Outcome for CSHCN**

Families of CSHCN will partner in decision-making at all levels, and will be satisfied with the services they receive.

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Families are the constants in the child's life, and are pivotal in making any system work. Families must have a leading role in the development of systems at all levels of policy, programs, and practice. Their participation in decision-making helps to ensure that services are family-centered and meet the needs of families.

<sup>2</sup> Subgroups are based on health consequences experienced by CSHCN. These are categories developed by Child and Adolescent Health Measurement Initiative, [www.cshcndata.org](http://www.cshcndata.org).

<sup>3</sup> The percentage for this outcome measure is derived from 2 indicators (see page 10).

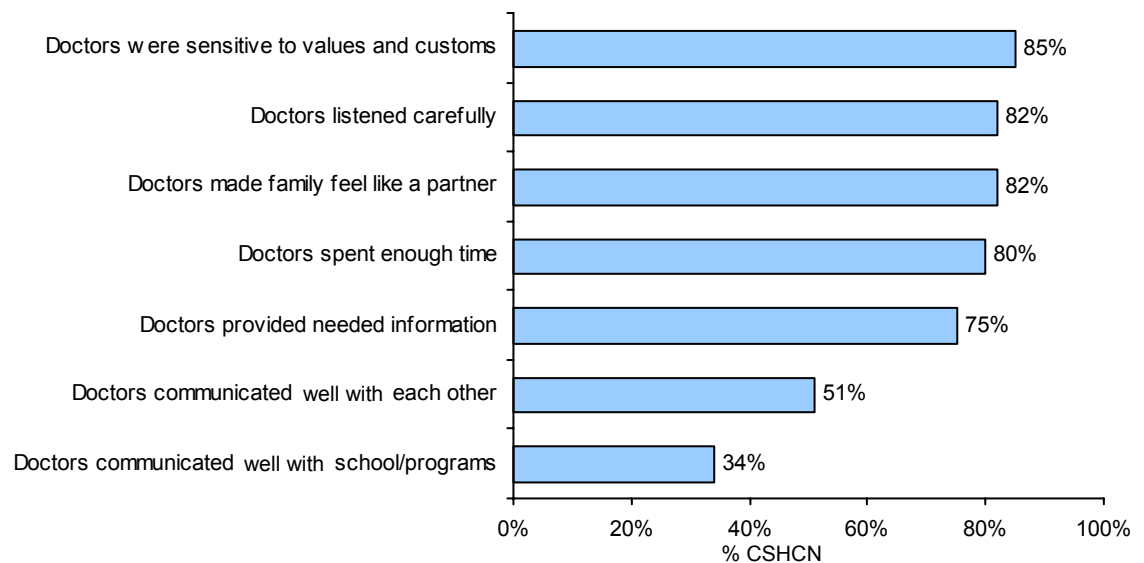
## What do families say about their child's medical home?

### Outcome measure

**48% CSHCN receive coordinated, ongoing, comprehensive care within a medical home.**<sup>4</sup>

### *Health care provider*

- 98% CSHCN had a usual place to go for sick care. 88% CSHCN had a usual place for preventive care.
- 88% CSHCN had a personal doctor or nurse.
- Family views of medical homes for CSHCN:



### **2010 National Outcome for CSHCN**

CSHCN will receive coordinated, ongoing, comprehensive care within a medical home.

~~~~~

*Children with special health care needs require a medical home – a source of ongoing routine health care in their community. The medical home assists in the early identification of special health care needs, provides ongoing primary and preventive care, and coordinates with other health and related services. Care is accessible, family-centered, continuous, comprehensive, coordinated, compassionate, and culturally-effective.*

### *Referrals*

- 76% CSHCN had no problems obtaining referrals when needed.

### *Care coordination*

- 14% CSHCN/families needed professional care coordination. Of these, only 74% received care coordination.
- Of CSHCN/families receiving care coordination, 85% were somewhat or very satisfied with the help they received in coordinating care.
- Comparing subgroups, CSHCN with functional limitations have the greatest need for care coordination:

	<u>% needing care coordination</u>
CSHCN who need ONLY prescription medicines	4%
CSHCN who need ONLY services	16%
CSHCN who need BOTH prescription medicines and services	16%
CSHCN with functional limitations	30%

<sup>4</sup> The percentage for this outcome measure is derived from 5 indicators (see page 10).

## What do families say about health insurance for CSHCN?

### Outcome measure

**70% CSHCN have adequate private and/or public insurance to pay for needed services.**<sup>5</sup>

#### **2010 National Outcome for CSHCN**

Families of CSHCN will have adequate private and/or public insurance to pay for services they need.

~~~~~

*Families must have a way to pay for services. Having private and/or public insurance is essential. CSHCN need access to a full range of needed health care and related services.*

### **Insurance coverage**

- 97.7% CSHCN have health insurance coverage.
- Types of health insurance coverage:

|                               | <u>% CSHCN</u> |
|-------------------------------|----------------|
| Private only <sup>6</sup>     | 70.7%          |
| Public only <sup>7</sup>      | 15.0%          |
| Private and public            | 9.9%           |
| Other comprehensive insurance | 2.1%           |
| None                          | 2.3%           |

- 94% CSHCN had no gaps in coverage during previous year.
- 90% CSHCN/families have enough information about how their child's health plan works.

### **Insurance problems**

- 11% CSHCN had insurance that never or only sometimes met their needs.
- 22% CSHCN had costs (not covered by insurance) that were not reasonable.
- 10% CSHCN had insurance that never or only sometimes permitted child to see needed providers.
- 13% CSHCN/families believe their child's health plan is not good for CSHCN.
- 12% CSHCN/families called/wrote to any of the child's health plans with a complaint or problem.
- 25% CSHCN/families, if they had a chance, would switch to a different health care plan.

<sup>5</sup> The percentage for this outcome measure is derived from 5 indicators (see page 10).

<sup>6</sup> Private insurance is defined as employer- or union-based or purchased directly. It includes military coverage.

<sup>7</sup> Public insurance includes Medicaid/QUEST.

***Underinsured CSHCN***

- An estimated 12% CSHCN are underinsured (based on health insurance not paying for a needed service, or inability of a family with health to afford out-of-pocket costs for services).
  - 3% CSHCN with insurance did not get or delayed needed care because of cost for services such as preventive care, specialty care, dental care, prescription medication, physical therapy, occupational therapy, speech therapy, mental health, substance abuse treatment/counseling, respite, genetic counseling.
  - 9% families of CSHCN with insurance paid over \$500 in out-of-pocket costs for medical/health-related expenses in the past year, and had financial problems caused by their child's health conditions or needed additional income to cover their child's medical expenses.

***What do families say about screening for special health care needs?***<sup>8</sup>

*Preventive care includes screening for newborn hearing and metabolic conditions, development, vision, hearing, oral health, behavior, mental health, and other areas.*

- 88% CSHCN had a usual place to go for preventive care.
- 88% CSHCN had a personal doctor or nurse.
- 99% CSHCN received needed routine preventive care, such as a physical examination or well-child check-up in the previous 12 months.

**2010 National Outcome for CSHCN**

Children will be screened early and continuously for special health care needs.

*~~~~~*  
 Screening may identify health conditions early, which helps infants and children to get timely services and intervention. Ongoing screening for children with special health care needs helps to identify new concerns and prevent secondary conditions.

***Are services organized, coordinated, and easy to use?******Outcome measure***

**69% CSHCN/families report community-based service systems are organized so they can use them easily.**<sup>9</sup>

**2010 National Outcome for CSHCN**

Community-based service systems will be organized so families can use them easily.

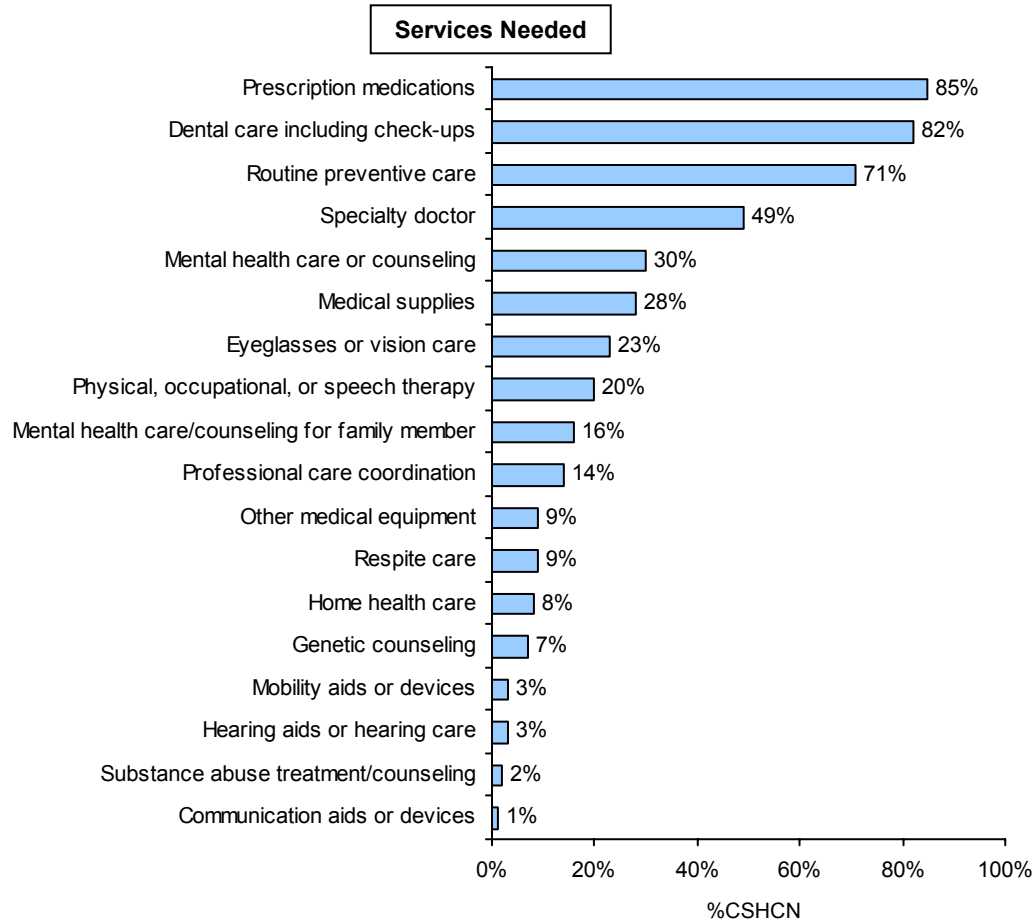
*~~~~~*  
 The system must be organized so that the needs of children/families can be identified, services are provided, and there is a way to pay for them. Since CSHCN require more medical and related services than other children, services need to be coordinated and easy to use.

<sup>8</sup> The survey did not have specific indicators for screening.

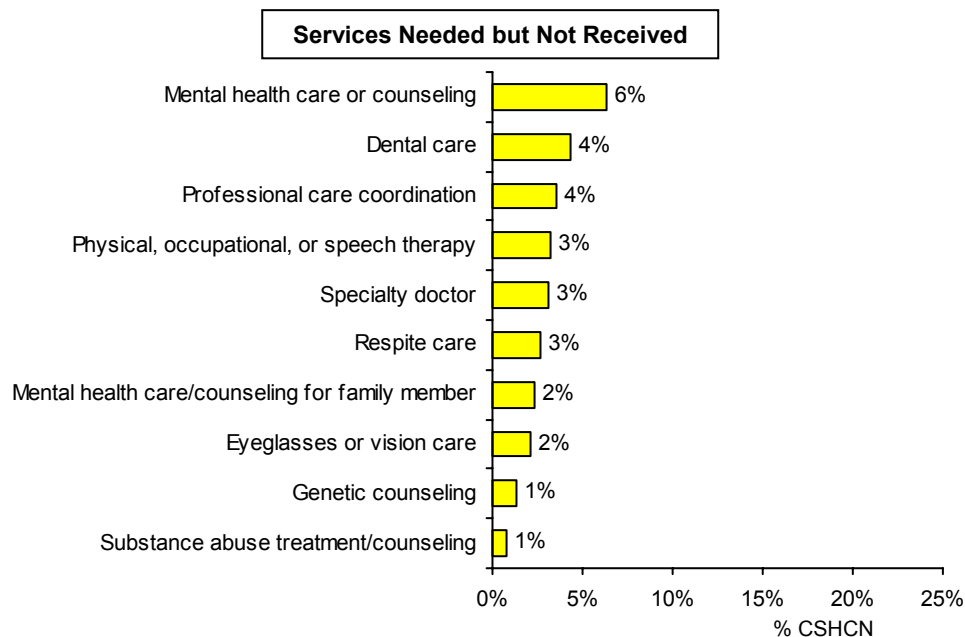
<sup>9</sup> The percentage for this outcome measure is based on 1 indicator (see page 10).

***Services needed***

- Health and related services needed by CSHCN include the following:



- Approximately 16% CSHCN are not receiving one or more needed health or related services. The greatest unmet needs are mental health care/counseling and dental care.





- Reasons for not receiving services included the following:

|                                                                                                                                                                                                                                             | <u>% CSHCN<br/>not receiving service</u> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Service not available in area / transportation problem                                                                                                                                                                                      | 23%                                      |
| Provider did not know how to treat or provide care                                                                                                                                                                                          | 18%                                      |
| Cost too much                                                                                                                                                                                                                               | 16%                                      |
| Health plan problem                                                                                                                                                                                                                         | 16%                                      |
| Not convenient times                                                                                                                                                                                                                        | 7%                                       |
| Other reasons                                                                                                                                                                                                                               | 18%                                      |
| <i>No insurance, could not get referral,<br/>difficulty getting appointment, couldn't find someone,<br/>dissatisfaction with provider, lack of resource in school,<br/>did not know service was available,<br/>did not know where to go</i> |                                          |

### ***Financial difficulties in getting needed services***

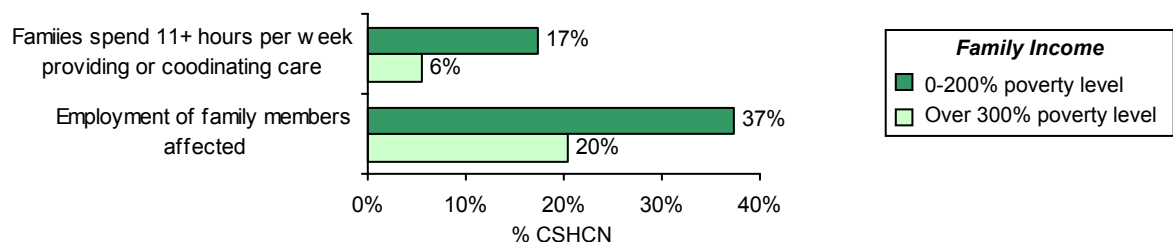
- 43% families of CSHCN paid \$1,000 or more out-of-pocket for medical care / health-related needs in the previous year.
- 13% families of CSHCN had financial problems caused by their child's condition.
- 14% families of CSHCN needed additional income to cover their child's medical expenses.
- 29% CSHCN had family members whose employment was affected by the child's condition (for example, reduced work hours or stopped working).

### ***Increased time in providing care***

- 11% families of CSHCN spend 11 or more hours per week providing or coordinating care.
- 5% CSHCN have health care needs that change all the time.
- 13% CSHCN had 11 or more days of school absences due to illness in the previous year.
- 10% CSHCN had 11 or more visits to doctor or other health care provider in previous year.

### ***Increased difficulty for families with lower income***

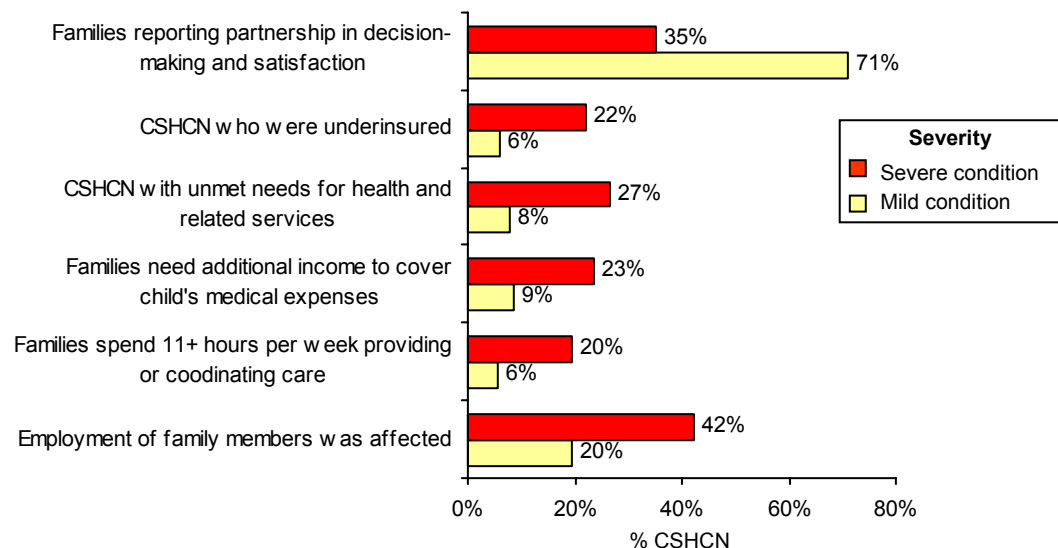
- Families of CSHCN with lower income are impacted more than families with higher income, in the following areas\*:



\* Lower income = 0-200% FPL (Federal Poverty Level). Higher income = over 300% FPL. For a family size of 4 family members, 0-200% FPL=\$41,640 or less, and over 300% FPL= over \$62,460 (2002 FPL). Items shown are statistically significant at the 95% confidence interval.

***Increased difficulty for families of CSHCN with severe conditions***

- Families of CSHCN with severe conditions are impacted more than those with mild conditions, in the following areas\*:



\* Severity grouping was based on family ranking of children's conditions or problems on a scale from 0-10, with "mild"=0-2, "moderate"=3-6, "severe"=7-10. Items shown are statistically significant at the 95% confidence interval.

## ***What do families say about the transition of youths with special health care needs to adult health care, work, and independence?***

### Outcome measure

**5% youth with special health care needs have received the services necessary to make transitions to all aspects of adult life.<sup>10</sup>**

- 60% youth with special health care needs have doctors who talked about changing needs as youth becomes an adult.<sup>11</sup>
- 54% youth with special health care needs have a plan for addressing changing needs.<sup>10</sup>
- 36% youth with special health care needs have doctors who discussed the shift to adult health care provider.<sup>10</sup>
- 29% youth with special health care needs have received vocational or career training.<sup>10</sup>

### **2010 National Outcome for CSHCN**

Youth with special health care needs will receive the services necessary to make transitions to adult life, including adult health care, work, and independence.

*Youth with special health care needs need to be prepared to take charge of their own health care and to lead a productive life as they choose. Appropriate adult health care services must be available to them. Transition services can give youths the opportunities to achieve their goals for adult life.*

<sup>10</sup> The percentage for this outcome measure is derived from 2 indicators (see page 10).

<sup>11</sup> Due to small numbers, these percentages may not be accurate and the actual percentages may be up to 10-15% higher or lower than the stated number.

*Summary of Outcomes for Hawaii CSHCN*

| <b>Outcome for CSHCN with indicator(s) used to determine outcome<sup>12</sup></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>% CSHCN</b>                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>% CSHCN age 0-17 years whose families partner in decision-making at all levels and are satisfied with the services they receive</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>52%</b>                                          |
| <ul style="list-style-type: none"> <li>• Doctors usually or always made the family feel like a partner</li> <li>• Family was very satisfied with services received</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 81%<br>56%                                          |
| <b>% CSHCN age 0-17 years who receive coordinated, ongoing, comprehensive care within a medical home</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>48%</b>                                          |
| <ul style="list-style-type: none"> <li>• The child had a usual source of care <ul style="list-style-type: none"> <li>○ Child had a usual source for sick care 98%</li> <li>○ Child had a usual source for preventive care 88%</li> </ul> </li> <li>• Child had a personal doctor or nurse</li> <li>• Child had no problems obtaining referrals when needed</li> <li>• Effective care coordination was received when needed <ul style="list-style-type: none"> <li>○ Child had professional care coordination when needed 74%</li> <li>○ Doctors communicated well with each other 51%</li> <li>○ Doctors communicated well with other programs 34%</li> </ul> </li> <li>• The child received family-centered care <ul style="list-style-type: none"> <li>○ Doctors spent enough time 80%</li> <li>○ Doctors listened carefully 82%</li> <li>○ Doctors were sensitive to values and customs 85%</li> <li>○ Doctors provided needed information 75%</li> <li>○ Doctors made family feel like a partner 82%</li> </ul> </li> </ul> | 88%<br><br><br>88%<br>76%<br>28%<br><br><br><br>63% |
| <b>% CSHCN age 0-17 years whose families have adequate private and/or public insurance to pay for the services they need</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>70%</b>                                          |
| <ul style="list-style-type: none"> <li>• Child had public or private insurance at time of interview</li> <li>• Child had no gaps in coverage during year prior to the interview</li> <li>• Insurance usually or always met child's needs</li> <li>• Costs not covered by insurance were usually or always reasonable</li> <li>• Insurance permitted child to see needed providers</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 98%<br>94%<br>89%<br>78%<br>90%                     |
| <b>% Children screened early and continuously for special health care needs<sup>7</sup></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>—</b>                                            |
| <b>% CSHCN age 0-17 years whose families report community-based service systems are organized so they can use them easily</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>69%</b>                                          |
| <ul style="list-style-type: none"> <li>• Services were organized for easy use</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 69%                                                 |
| <b>% Youth with special health care needs who received the services necessary to make transitions to all aspects of adult life</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>5%</b>                                           |
| <ul style="list-style-type: none"> <li>• Child has received guidance and support in transition to adulthood <ul style="list-style-type: none"> <li>○ Doctors talked about changing needs as child becomes adult 60%</li> <li>○ Child has plan for addressing changing needs 54%</li> <li>○ Doctors discussed shift to adult provider 36%</li> </ul> </li> <li>• Child has received vocational or career training</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 15%<br><br><br>29%                                  |

<sup>12</sup> Only children who met all applicable indicators were counted as achieving the outcome. Similarly, only children who met all applicable sub-indicators were counted as achieving the indicator. The outcome indicators and method of analysis were established by the federal Maternal and Child Health Bureau.

## ***Additional Hawaii Data Related to the Outcomes for CSHCN***

### **Families partnership**

- 89% families of CSHCN are included in making decisions about child's health care.<sup>13</sup>
- For children with special needs age 0-3 years receiving early intervention (EI) services<sup>14</sup>:
  - 93% families are satisfied with family supports provided to meet child's needs.
  - 91% families are satisfied with progress their child made while receiving EI services/supports.

### **Medical home**

- 92% families of CSHCN have a doctor who knows about child's health.<sup>12</sup> Families say:
  - 90% – child's doctor listens carefully to them.
  - 89% – families are included in making decisions about child's health care.
  - 88% – families get information about child's condition and care.
  - 86% – doctor talks about child's growth, behavior, preventing injuries, immunizations.
  - 82% – when child is sick, doctor or other doctors are available at all hours of the day or night.
  - 74% – families get reassurance and support about the care families provide.
  - 71% – doctor arranges/coordinates services provided by different doctors, therapists, other persons.
  - 70% – families' cultural background is recognized and respected.
  - 57% – families get information about educational and other support services in the community.

### **Health insurance**

- CSHCN with insurance coverage: health – 97%; dental – 87%; drug – 91%; vision – 74%.<sup>12</sup>
- 62% families of CSHCN had out-of-pocket costs for their child's health care in the last 12 months, with 18% families having costs of over \$1,000.<sup>12</sup>
- 39% families of CSHCN said they or family member cut down/stopped working to care for their child.<sup>12</sup>
- 33% families of CSHCN said that extra costs of care for their child resulted in financial problems.<sup>12</sup>

### **Screening**

- 99% newborns are screened for metabolic conditions. 100% infants with metabolic conditions receive appropriate follow-up services.<sup>15</sup>
- 98% newborns are screened for hearing. 92% infants with permanent hearing loss receive appropriate intervention services.<sup>16</sup>
- Primary care physicians screening most of their children age 3-4 years for development – 77%, hearing – 66%, and vision – 67%. Barriers to screening included: difficult getting child to test, lack of staff time, reimbursement, lack of staff trained to screen, no screening tool or equipment in office.<sup>17</sup>

### **Organized system of services**

- 6% CSHCN age 5-11 years had difficulty getting health care, due to: insurance was not accepted, could not afford cost, hard to get appointment, other reason.<sup>18</sup>
- 11% CSHCN age 5-11 years difficulty getting dental care, due to: could not afford cost, transportation problem, hard to get appointment, could not find the kind of dentist needed, other reason.<sup>17</sup>
- 32% families of CSHCN reported that their child needed but did not get service(s), due to: not available in area, not covered by health plan, cost too much, not convenient times, transportation problem, plane fare and/or overnight lodging not covered by health plan, not able to find person with skills or training.<sup>12</sup>
- For children age 0-3 years receiving EI services, 89% families say that all providers and agencies listed in the Individual Family Support Plan (IFSP) work together in providing services to child and family.<sup>13</sup>

### **Transition to adult life**

- Anecdotal reports of youths with special needs having difficulty in transitioning from pediatric to adult health care physicians.<sup>19</sup>

<sup>13</sup> Hawaii Department of Health (DOH), Children with Special Health Needs Branch (CSHNB), Survey of Families of CSHCN, 2000.

<sup>14</sup> DOH, CSHNB, Early Intervention Section, and Public Health Nursing Branch. Parent survey, 2002.

<sup>15</sup> DOH, CSHNB, Newborn Metabolic Screening Program, 2002.

<sup>16</sup> DOH, CSHNB, Newborn Hearing Screening Program, 2002 births.

<sup>17</sup> DOH, CSHNB, Healthy Child Care Hawaii, Survey of Physicians, 2001.

<sup>18</sup> DOH, Family Health Services Division, Children's Health Issues 2000.

<sup>19</sup> DOH, CSHNB.

## ***Role of Children with Special Health Needs Branch In Developing the System of Services for CSHCN***

The Family Health Services Division (FHSD), Hawaii Department of Health, is the lead state agency for Title V (Maternal and Child Health Block Grant) of the Social Security Act. Within FHSD, the Children with Special Health Needs Branch (CSHNB) has the Title V CSHCN responsibility:

*To provide and promote family-centered, community-based, coordinated care for children with special health care needs and to facilitate the development of community-based, systems of service for such children and their families.*

Within CSHNB, mandates for system development also include:

- Children with special health needs – Hawaii Revised Statutes (HRS) §321-51 to 54.
- Early intervention services for children age 0-3 years with special needs – HRS §321- 351 to 357 and Part C of the Individuals with Disabilities Education Act (IDEA).
- Newborn hearing screening – HRS §321-361 to 363.
- Newborn metabolic screening – HRS §321-291.
- Birth defects program – HRS §321-421 to 426.

CSHNB works in collaboration with state, county, and community public/private partners and families to accomplish these goals. Resources are directed toward a combination of direct health care services, enabling services, population-based services, and infrastructure or resource-building activities.

### ***Websites for More Information***

American Academy of Pediatrics – *medical home, screening*: [www.medicalhomeinfo.org](http://www.medicalhomeinfo.org)

Champions for Progress – *implementing systems of care for CSHCN*: [www.championsforprogress.org](http://www.championsforprogress.org)

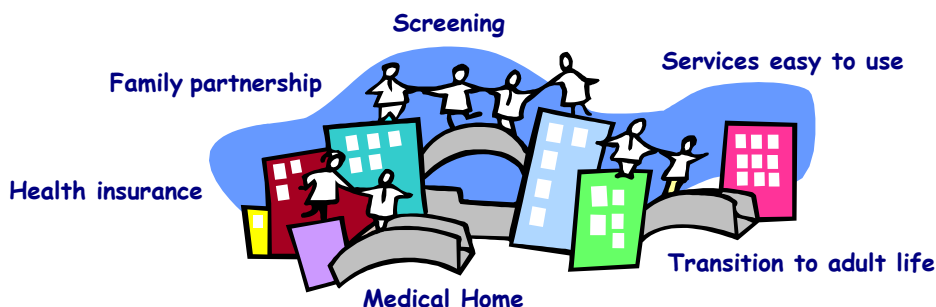
Data Resource Center for Child and Adolescent Health – *National Survey of CSHCN data* – [www.cshcndata.org](http://www.cshcndata.org)

Family Voices – *families speaking on behalf of CSHCN*: [www.familyvoices.org](http://www.familyvoices.org)

Healthy and Ready to Work National Center – *transition to adult life*: [www.hrtw.org](http://www.hrtw.org)

Maternal and Child Health Bureau – *Title V, block grant, CSHCN*, [www.mchb.hrsa.gov/programs](http://www.mchb.hrsa.gov/programs); *Title V Information System for state programs, services, activities, and performance measures*  
<https://performance.hrsa.gov/mchb/mchreports>

National Center for Health Statistics – *National Survey of Children with Special Health Care Needs*:  
[www.cdc.gov/nchs/about/major/slats/cshcn.htm](http://www.cdc.gov/nchs/about/major/slats/cshcn.htm)



For more information, contact:  
**Children with Special Health Needs Branch**  
Hawaii Department of Health  
741 Sunset Avenue  
Honolulu, Hawaii 96816  
Phone (808)733-9070 • Fax (808)733-9068

**APPENDIX 4-B: Hawaii Data from the National Survey of Children's Health (2003)**

## A Family View of Children's Health in Hawai'i: Children With and Without Special Health Care Needs, 2003

*Hawai'i Data from the National Survey of Children's Health*

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### National Survey of Children's Health – 2003

The National Survey of Children's Health was sponsored by the Maternal and Child Health Bureau, in partnership with the Centers for Disease Control and Prevention/National Center for Health Statistics. It was conducted as a component of the State and Local Area Integrated Telephone Survey (SLAITS).

Random-digit-dial samples were used. The survey was conducted in English and Spanish, using computer-assisted telephone interviews. About 2000 children age 0-17 years per state were surveyed January 2003 - July 2004.

Children with special health care needs (CSHCN) are defined as "those who have or are at increased risk for chronic physical, developmental, behavioral, or emotional conditions, and require health and related services of a type or amount beyond that generally required by children" (Maternal and Child Health Bureau, 1995). For this survey, CSHCN were identified by their having a medical, behavioral, or other health condition that has lasted or is expected to last 12 months or longer, and meets one or more of the following:

- Increased use of medical care, mental health, or educational services
- Need for prescription medicines
- Limited ability to do things
- Need for special therapy
- Need for treatment/counseling for an emotional, developmental, or behavioral problem

In Hawaii, 2,021 children were surveyed, of which 320 met the CSHCN criteria. Sample numbers were weighted and adjusted for total population of Hawaii. County and island information were not available.

The data for Hawaii State Profile was provided by the National Survey of Children's Health Data Resource Center ([www.nschedata.org](http://www.nschedata.org)), a project of the Child and Adolescent Health Measurement Initiative. Hawaii data were further analyzed by the Children with Special Health Needs Branch in the Family Health Services Division, Hawaii Department of Health.

#### Table Notes

**Sig. Diff.** Significant Difference

★ Statistically significant difference between CSHCN and Not CSHCN rates at 95% confidence interval

## Hawaii State Profile

| Children Age 0-17 Years                   |                                                                                                                                                                    | U.S. | Hawaii      | Hawaii CSHCN | Hawaii Not CSHCN | Sig. Diff. |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|--------------|------------------|------------|
| <b>Child's Health Status</b>              |                                                                                                                                                                    |      |             |              |                  |            |
| <b>Overall Child Health Status</b>        | % children whose overall health is excellent or very good                                                                                                          | 84.1 | <b>86.7</b> | 72.1         | 89.2             | ★          |
| <b>Moderate or Severe Health Problems</b> | % children with health problems rated as moderate or severe by parents                                                                                             | 7.9  | <b>5.6</b>  | 37.3         | 0                | ★          |
| <b>Impact of Asthma on Family</b>         | % children with asthma whose families are greatly or moderately affected in some way by child's health condition                                                   | 16.3 | <b>7.4</b>  | 7.4          | 7.4              |            |
| <b>Impact of Asthma</b>                   | % children affected by asthma during past year                                                                                                                     | 8.0  | <b>10.3</b> | 39.0         | 5.4              | ★          |
| <b>Injury</b>                             | % children age 0-5 with injuries requiring medical attention during past year                                                                                      | 9.4  | <b>7.9</b>  | 9.6          | 7.7              |            |
| <b>Missed School Days</b>                 | % school age children who missed 11 or more days of school in past year due to illness or injury                                                                   | 5.2  | <b>4.3</b>  | 11.3         | 2.9              | ★          |
| <b>Parents' Concerns</b>                  | % children age 0-5 whose parents have one or more concerns about child's learning, development, or behavior                                                        | 36.6 | <b>42.3</b> | 61.4         | 39.8             | ★          |
| <b>Socio-Emotional Difficulties</b>       | % children age 3-17 with moderate or severe difficulties in the area of emotions, concentration, behavior, or getting along with others                            | 9.2  | <b>7.6</b>  | 31.3         | 3.2              | ★          |
| <b>Breastfeeding</b>                      | % children age 0-5 who were breastfed for any length of time                                                                                                       | 72.3 | <b>82.2</b> | 69.5         | 83.9             | ★          |
| <b>Child's Health Care</b>                |                                                                                                                                                                    |      |             |              |                  |            |
| <b>Current Health Insurance</b>           | % children currently insured                                                                                                                                       | 91.2 | <b>94.8</b> | 93.2         | 95.1             |            |
| <b>Consistent Insurance Coverage</b>      | % children currently uninsured or not insured for some period during past year                                                                                     | 14.9 | <b>9.2</b>  | 12.0         | 8.8              |            |
| <b>Preventive Health Care</b>             | % children with a preventive medical care visit in past year                                                                                                       | 77.8 | <b>79.0</b> | 85.3         | 77.8             |            |
| <b>Preventive Health and Dental Care</b>  | % children with both a preventive medical care visit and a preventive dental care visit in the past year                                                           | 58.8 | <b>63.7</b> | 72.2         | 62.2             |            |
| <b>Mental Health Care</b>                 | % children with current emotional, developmental, or behavioral problems who received some type of mental health care during the past year                         | 58.7 | <b>66.1</b> | 70.8         | 48.8             |            |
| <b>Medical Home</b>                       | % children who have a personal doctor or nurse from whom they receive family-centered, accessible, comprehensive, culturally sensitive and coordinated health care | 46.1 | <b>45.3</b> | 39.8         | 46.3             |            |
| <b>Child's School and Activities</b>      |                                                                                                                                                                    |      |             |              |                  |            |
| <b>Early Childhood School</b>             | % children age 3-5 who regularly attended preschool, kindergarten, Head Start or Early Start during past month                                                     | 60.7 | <b>64.4</b> | 79.1         | 62.4             |            |
| <b>Activities Outside of School</b>       | % children age 6-17 who participate in one or more organized activities outside of school                                                                          | 81.0 | <b>82.5</b> | 80.9         | 82.9             |            |
| <b>Repetition of Grade</b>                | % children age 6-17 who repeated at least 1 grade in school                                                                                                        | 11.3 | <b>7.3</b>  | 14.3         | 5.9              | ★          |
| <b>Staying Home Alone</b>                 | % children age 6-11 who stayed home alone during past week                                                                                                         | 15.9 | <b>21.9</b> | 25.4         | 21.3             |            |
| <b>Child's Family</b>                     |                                                                                                                                                                    |      |             |              |                  |            |
| <b>Reading to Young Children</b>          | % children age 0-5 read aloud to by family members every day during the past week                                                                                  | 47.8 | <b>54.9</b> | 57.5         | 54.6             |            |
| <b>Household Smoking</b>                  | % children who live in households where someone smokes                                                                                                             | 29.5 | <b>28.5</b> | 31.3         | 28.0             |            |
| <b>Religious Services</b>                 | % children who attend religious services at least once a week                                                                                                      | 55.7 | <b>51.5</b> | 51.9         | 51.5             |            |
| <b>Mother's Health</b>                    | % children with mothers whose overall physical and mental health is excellent or very good                                                                         | 58.9 | <b>61.7</b> | 54.2         | 63.0             |            |
| <b>Child and Family's Neighborhood</b>    |                                                                                                                                                                    |      |             |              |                  |            |
| <b>Supportive Neighborhood</b>            | % children living in neighborhoods parents describe as supportive                                                                                                  | 81.4 | <b>83.8</b> | 85.3         | 83.5             |            |
| <b>Safety of Child in Neighborhood</b>    | % children living in neighborhoods or communities parents feel are usually or always safe                                                                          | 83.8 | <b>81.9</b> | 80.4         | 82.2             |            |
| <b>Child Care Issues</b>                  | % children age 0-5 whose parents had to make different child care arrangements in the past month or a job change for child care reasons in the past year, or both  | 33.2 | <b>34.4</b> | 41.5         | 33.5             |            |



### Hawaii Data Demographics

| <b>Children Age 0-17 Years</b>                                                                                    | <b>All Children<br/>(N=296,099)<br/>%</b> | <b>CSHCN<br/>(N=44,310)<br/>%</b> | <b>Not CSHCN<br/>(N=251,789)<br/>%</b> | <b>Sig.<br/>Diff.</b> |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------|----------------------------------------|-----------------------|
| Age:                                                                                                              |                                           |                                   |                                        |                       |
| 0-5 years                                                                                                         | 34.4                                      | 26.5                              | 35.8                                   |                       |
| 6-11 years                                                                                                        | 31.7                                      | 32.6                              | 31.6                                   |                       |
| 12-17 years                                                                                                       | 33.9                                      | 40.9                              | 32.7                                   |                       |
| Gender:                                                                                                           |                                           |                                   |                                        |                       |
| Male                                                                                                              | 51.4                                      | 59.5                              | 50.0                                   |                       |
| Female                                                                                                            | 48.6                                      | 40.5                              | 50.0                                   |                       |
| Highest level of education attained by anyone in the household is high school, college, or graduate school:       |                                           |                                   |                                        |                       |
| <12 years                                                                                                         | 2.4                                       | 4.2                               | 2.1                                    |                       |
| 12 years                                                                                                          | 24.1                                      | 25.3                              | 23.9                                   |                       |
| >12 years                                                                                                         | 73.2                                      | 69.5                              | 73.8                                   |                       |
| Primary language spoken in the home:                                                                              |                                           |                                   |                                        |                       |
| English                                                                                                           | 94.1                                      | 97.4                              | 93.6                                   | ★                     |
| Other language                                                                                                    | 5.9                                       | 2.6                               | 6.5                                    | ★                     |
| Child is of Hispanic or Latino origin                                                                             | 11.9                                      | 12.6                              | 11.8                                   |                       |
| Race:                                                                                                             |                                           |                                   |                                        |                       |
| White only                                                                                                        | 17.5                                      | 21.0                              | 16.9                                   |                       |
| Black only                                                                                                        | 3.7                                       | 5.2                               | 3.4                                    |                       |
| Multiple race                                                                                                     | 32.7                                      | 35.9                              | 32.2                                   |                       |
| Asian only                                                                                                        | 30.2                                      | 22.4                              | 31.6                                   | ★                     |
| Native Hawaiian/Pacific Islander                                                                                  | 15.2                                      | 15.5                              | 15.1                                   |                       |
| Other                                                                                                             | 0.7                                       | 0.0                               | 0.7                                    |                       |
| Born in the United States:                                                                                        |                                           |                                   |                                        |                       |
| Mother                                                                                                            | 75.3                                      | 88.7                              | 72.9                                   | ★                     |
| Father                                                                                                            | 81.7                                      | 86.6                              | 80.9                                   |                       |
| Child                                                                                                             | 94.0                                      | 97.0                              | 93.5                                   |                       |
| A household member was employed at least 50 of the past 52 weeks                                                  | 91.4                                      | 90.8                              | 91.5                                   |                       |
| Total combined family income by poverty level (P.L.):                                                             |                                           |                                   |                                        |                       |
| Less than 100% P.L.                                                                                               | 17.6                                      | 17.2                              | 17.7                                   |                       |
| 100 to below 150% P.L.                                                                                            | 12.9                                      | 12.9                              | 12.9                                   |                       |
| 150 to below 200% P.L.                                                                                            | 12.9                                      | 15.5                              | 12.4                                   |                       |
| 200 to below 300% P.L.                                                                                            | 19.6                                      | 17.4                              | 20.0                                   |                       |
| 300 to below 400% P.L.                                                                                            | 16.5                                      | 16.2                              | 16.5                                   |                       |
| At or above 400% P.L.                                                                                             | 20.6                                      | 20.8                              | 20.5                                   |                       |
| Someone in household received cash assistance from a state welfare program, at any time during the past 12 months | 16.6                                      | 16.8                              | 16.6                                   |                       |
| Child in household received Food Stamps, during past 12 months                                                    | 21.6                                      | 22.4                              | 21.5                                   |                       |
| Children over age 3 years:                                                                                        | (N=148,167)                               | (N=22,351)                        | (N=125,916)                            |                       |
| Child in the household received free or reduced-cost breakfasts or lunches at school                              | 41.9                                      | 47.3                              | 41.0                                   |                       |
| Someone in the household currently receives benefits from the Women, Infants, and Children (WIC) Program          | 19.2                                      | 21.5                              | 18.8                                   |                       |



**Health Status**

| <b>Children Age 0-17 Years</b>                                                                                              | <b>All Children</b><br>(N=296,099)<br>% | <b>CSHCN</b><br>(N=44,310)<br>% | <b>Not CSHCN</b><br>(N=251,789)<br>% | <b>Sig.<br/>Diff.</b> |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-----------------------|
| Child's health is described as "Excellent" or "Very Good"                                                                   | 86.6                                    | 72.1                            | 89.1                                 | ★                     |
| Nutritional status (based on Body Mass Index [BMI]):                                                                        |                                         |                                 |                                      |                       |
| Underweight                                                                                                                 | 9.3                                     | 10.0                            | 9.2                                  |                       |
| Normal weight                                                                                                               | 54.9                                    | 54.6                            | 55.0                                 |                       |
| At risk for overweight                                                                                                      | 13.5                                    | 12.0                            | 13.8                                 |                       |
| Overweight                                                                                                                  | 22.2                                    | 23.3                            | 22.0                                 |                       |
| Any need:                                                                                                                   |                                         |                                 |                                      |                       |
| Need or use medicine prescribed by a doctor                                                                                 | 17.5                                    | 75.4                            | 7.3                                  | ★                     |
| Need or use more medical, mental health, or educational services than is usual for most children of the same age            | 9.5                                     | 43.8                            | 3.5                                  | ★                     |
| Limited or prevented in his/her ability to do things most children of the same age can do                                   | 5.1                                     | 25.0                            | 1.6                                  | ★                     |
| Need or get special therapy, such as physical, occupational or speech therapy                                               | 4.7                                     | 19.2                            | 2.2                                  | ★                     |
| Has emotional, developmental or behavioral problem that lasted or is expected to last 12 months or longer                   | 5.7                                     | 6.4                             | 1.2                                  | ★                     |
| Parents have been told (by a doctor, health professional, teacher, or school official) that child has a learning disability | 8.7                                     | 25.9                            | 5.5                                  | ★                     |
| <b>Health Conditions</b>                                                                                                    |                                         |                                 |                                      |                       |
| Parent has been told by a doctor or health professional that their child has this condition:                                |                                         |                                 |                                      |                       |
| Asthma                                                                                                                      | 17.1                                    | 46.4                            | 11.9                                 | ★                     |
| Bone, joint, or muscle problems                                                                                             | 2.7                                     | 9.1                             | 1.6                                  | ★                     |
| Diabetes                                                                                                                    | 0.1                                     | 0.5                             | 0                                    |                       |
| Autism                                                                                                                      | 0.3                                     | 1.7                             | 0                                    |                       |
| Any developmental delay or physical impairment                                                                              | 3.6                                     | 13.6                            | 1.9                                  | ★                     |
| Fever or any respiratory allergy, in past year                                                                              | 9.4                                     | 27.4                            | 6.3                                  | ★                     |
| Food or digestive allergy, in past year                                                                                     | 2.2                                     | 6.1                             | 1.5                                  | ★                     |
| Eczema or skin allergy, in past year                                                                                        | 8.7                                     | 16.0                            | 7.5                                  | ★                     |
| <i>Children ≥24 months:</i>                                                                                                 | <i>(N=257,804)</i>                      | <i>(N=40,579)</i>               | <i>(N=217,225)</i>                   |                       |
| Hearing problems or vision problems that cannot be corrected with glasses or contact lenses                                 | 2.0                                     | 6.4                             | 1.2                                  | ★                     |
| Attention Deficit Disorder (ADD) or Attention Deficit Hyperactive Disorder (ADHD)                                           | 5.6                                     | 25.6                            | 1.8                                  | ★                     |
| Depression or anxiety problems                                                                                              | 3.4                                     | 14.8                            | 1.2                                  | ★                     |
| Behavioral or conduct problems                                                                                              | 4.1                                     | 20.3                            | 1.1                                  | ★                     |
| <i>Children ≥36 months:</i>                                                                                                 | <i>(N=246,029)</i>                      | <i>(N=38,680)</i>               | <i>(N=207,349)</i>                   |                       |
| Frequent or severe headaches, including migraines, in past year                                                             | 3.2                                     | 8.5                             | 2.2                                  | ★                     |
| Stuttering, stammering, or other speech problems, in past year                                                              | 2.4                                     | 8.4                             | 1.3                                  | ★                     |
| Three or more ear infections, in past year                                                                                  | 3.1                                     | 6.6                             | 2.4                                  |                       |
| Child's health condition(s) or limitation(s) is:                                                                            |                                         |                                 |                                      |                       |
| Minor                                                                                                                       | 71.2                                    | 54.4                            | 80.1                                 | ★                     |
| Moderate                                                                                                                    | 24.4                                    | 37.4                            | 17.6                                 | ★                     |
| Severe                                                                                                                      | 3.5                                     | 6.8                             | 1.9                                  |                       |

**Asthma**

| <b>Children Age 0-17 Years Who Currently Have Asthma</b>                          | <b>All Children</b><br>(N=34,979)<br>% | <b>CSHCN</b><br>(N=18,040)<br>% | <b>Not CSHCN</b><br>(N=16,938)<br>% | <b>Sig. Diff.</b> |
|-----------------------------------------------------------------------------------|----------------------------------------|---------------------------------|-------------------------------------|-------------------|
| Health difficulties caused by asthma are:                                         |                                        |                                 |                                     |                   |
| Minor difficulties                                                                | 77.2                                   | 71.5                            | 83.4                                |                   |
| Moderate difficulties                                                             | 18.7                                   | 21.6                            | 15.6                                |                   |
| Severe difficulties                                                               | 4.0                                    | 6.8                             | 1.0                                 |                   |
| Burden placed by asthma on the family:                                            |                                        |                                 |                                     |                   |
| Great or moderate                                                                 | 7.4                                    | 7.4                             | 7.4                                 |                   |
| Little or none                                                                    | 92.5                                   | 92.5                            | 92.6                                |                   |
| Length of time since child last took asthma medication:                           |                                        |                                 |                                     |                   |
| Less than 7 days ago                                                              | 31.9                                   | 50.6                            | 11.6                                | ★                 |
| 1 week to less than 3 months ago                                                  | 29.7                                   | 28.5                            | 31.0                                |                   |
| 3 months to less than 1 year ago                                                  | 21.7                                   | 12.0                            | 32.3                                | ★                 |
| One year or more ago                                                              | 16.7                                   | 8.9                             | 25.2                                | ★                 |
| During the past 12 months, child had an episode of asthma or an asthma attack     | 46.5                                   | 56.1                            | 36.4                                |                   |
| During the past 12 months, child stayed overnight in a hospital because of asthma | 3.0                                    | 4.5                             | 1.4                                 |                   |

**Oral Health**

| <b>Children Age 1-17 Years</b>                                                                                    | <b>All Children</b><br>(N=273,648)<br>% | <b>CSHCN</b><br>(N=42,457)<br>% | <b>Not CSHCN</b><br>(N=231,191)<br>% | <b>Sig. Diff.</b> |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Condition of child's teeth:                                                                                       |                                         |                                 |                                      |                   |
| Excellent                                                                                                         | 45.6                                    | 50.7                            | 44.6                                 |                   |
| Very good                                                                                                         | 25.2                                    | 21.3                            | 25.9                                 |                   |
| Good                                                                                                              | 22.7                                    | 19.7                            | 23.3                                 |                   |
| Fair                                                                                                              | 5.1                                     | 7.4                             | 4.7                                  |                   |
| Poor                                                                                                              | 1.5                                     | 0.9                             | 1.6                                  |                   |
| For children with "fair" or "poor" teeth, problems with teeth:                                                    | (N=17,992)                              | (N=3,525)                       | (N=14,468)                           |                   |
| Pain                                                                                                              | 1.8                                     | 0                               | 2.3                                  |                   |
| Cavities                                                                                                          | 59.0                                    | 47.0                            | 61.9                                 |                   |
| Broken front tooth, or teeth that need repair                                                                     | 11.1                                    | 8.7                             | 11.6                                 |                   |
| Crooked teeth, or teeth that need braces                                                                          | 32.6                                    | 51.5                            | 28.0                                 |                   |
| Other                                                                                                             | 0.8                                     | 0                               | 1.1                                  |                   |
| Hygiene                                                                                                           | 2.2                                     | 0.6                             | 2.6                                  |                   |
| Discoloration                                                                                                     | 1.8                                     | 4.7                             | 1.1                                  |                   |
| Enamel problems                                                                                                   | 0                                       | 0                               | 0                                    |                   |
| Gum problems                                                                                                      | 2.4                                     | 9.3                             | 0.8                                  |                   |
| Teeth problems                                                                                                    | 4.1                                     | 3.5                             | 4.2                                  |                   |
| Nerves                                                                                                            | 2.8                                     | 0                               | 3.5                                  |                   |
| Length of time since child last saw a dentist (including orthodontist, oral surgeon, or other dental specialist): |                                         |                                 |                                      |                   |
| Never                                                                                                             | 10.3                                    | 6.3                             | 11.0                                 | ★                 |
| 6 months or less                                                                                                  | 69.1                                    | 74.1                            | 68.2                                 |                   |
| Over 6 months to 1 year ago                                                                                       | 13.7                                    | 12.5                            | 13.9                                 |                   |
| Over 1 year ago                                                                                                   | 4.6                                     | 4.1                             | 4.6                                  |                   |

**Difficulties with Emotions, Concentration, or Getting Along with Others**

| <b>Children Age 3-17 Years</b>                                                              | <b>All Children</b><br>(N=246,029)<br>% | <b>CSHCN</b><br>(N=38,680)<br>% | <b>Not CSHCN</b><br>(N=207,349)<br>% | <b>Sig. Diff.</b> |
|---------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Children with difficulties with emotions, concentration, or getting along with other people | 16.9                                    | 46.9                            | 11.4                                 | ★                 |
| These difficulties are:                                                                     |                                         |                                 |                                      |                   |
| Minor                                                                                       | 9.3                                     | 15.7                            | 8.1                                  | ★                 |
| Moderate                                                                                    | 6.8                                     | 26.8                            | 3.0                                  | ★                 |
| Severe                                                                                      | 0.8                                     | 4.3                             | 0.2                                  | ★                 |
| Burden put on family by child's mental and emotional health:                                |                                         |                                 |                                      |                   |
| A great deal                                                                                | 1.0                                     | 5.6                             | 0.1                                  | ★                 |
| A medium amount                                                                             | 2.6                                     | 9.7                             | 1.3                                  | ★                 |
| A little                                                                                    | 5.0                                     | 17.1                            | 2.7                                  | ★                 |
| Children with ADD/ADHD who are currently taking medication for ADD/ADHD                     | 2.5                                     | 15.6                            | 0.1                                  | ★                 |

**Health Insurance**

| <b>Children Age 0-17 Years</b>                                                                                              | <b>All Children</b><br>(N=296,099)<br>% | <b>CSHCN</b><br>(N=44,310)<br>% | <b>Not CSHCN</b><br>(N=251,789)<br>% | <b>Sig. Diff.</b> |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Child has health coverage, including health insurance, prepaid plans such as HMO's, or government programs such as Medicaid | 94.5                                    | 92.9                            | 94.8                                 |                   |
| Child's health coverage is Medicaid/QUEST                                                                                   | 22.5                                    | 24.7                            | 22.1                                 |                   |
| Child was covered by health insurance for only a portion of the past 12 months                                              | 7.9                                     | 11.2                            | 7.3                                  |                   |
| Child has insurance that helps pay for routine dental care including cleanings, x-rays and examinations                     | 88.5                                    | 87.8                            | 88.6                                 |                   |

**Health Care Access****Medical Care**

| <b>Children Age 0-17 Years</b>                                                                                                                                                                                                                   | <b>All Children</b><br>(N=296,099)<br>% | <b>CSHCN</b><br>(N=44,310)<br>% | <b>Not CSHCN</b><br>(N=251,789)<br>% | <b>Sig. Diff.</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Child saw a doctor, nurse, or other health care professional for medical care, including sick-care, well-child check-ups, physical examinations, and hospitalizations, during the past 12 months                                                 | 85.0                                    | 92.5                            | 83.6                                 | ★                 |
| Child needed medical care, but did not see a doctor, nurse, or other health care professional, during the past 12 months                                                                                                                         | 0.1                                     | 0.1                             | 0.1                                  |                   |
| Child saw a doctor, nurse, or other health professional for preventive care at least 1 time during the past 12 months                                                                                                                            | 77.7                                    | 84.8                            | 76.5                                 | ★                 |
| Child went to a hospital emergency room at least 1 time during the past 12 months                                                                                                                                                                | 14.2                                    | 21.9                            | 12.9                                 | ★                 |
| <i>Children who saw a health professional for sick-child care</i><br>Child saw a doctor, nurse, or other health professional for sick-child care during the past 12 months (excluding emergency room visits, hospitalizations, well-child care): | (N=251,556)                             | (N=40,975)                      | (N=210,580)                          |                   |
| 0 times                                                                                                                                                                                                                                          | 32.5                                    | 17.1                            | 35.5                                 | ★                 |
| 1-5 times                                                                                                                                                                                                                                        | 62.1                                    | 63.0                            | 61.9                                 |                   |
| 6-10 times                                                                                                                                                                                                                                       | 3.8                                     | 14.7                            | 1.7                                  | ★                 |
| 11-15 times                                                                                                                                                                                                                                      | 0.9                                     | 2.6                             | 0.5                                  |                   |
| Over 15 times                                                                                                                                                                                                                                    | 0.8                                     | 2.6                             | 0.4                                  |                   |
| Child did not receive all needed medical care, during the past 12 months                                                                                                                                                                         | 0.6                                     | 2.6                             | 0.2                                  |                   |
| <i>Children not receiving needed medical care</i><br>Reasons for not getting all the medical care needed:                                                                                                                                        | (N=1,915)                               | (N=1,217)                       | (N=699)                              |                   |
| Cost too much                                                                                                                                                                                                                                    | 48.5                                    | 71.6                            | 8.2                                  | ★                 |
| No insurance                                                                                                                                                                                                                                     | 45.8                                    | 67.4                            | 8.2                                  |                   |
| Treatment is ongoing                                                                                                                                                                                                                             | 37.5                                    | 55.1                            | 6.8                                  |                   |
| Dissatisfaction with doctor                                                                                                                                                                                                                      | 36.3                                    | 48.2                            | 15.6                                 |                   |
| Health plan problem                                                                                                                                                                                                                              | 30.6                                    | 48.2                            | 0                                    |                   |
| Can't find doctor who accepts child's insurance                                                                                                                                                                                                  | 30.6                                    | 48.2                            | 0                                    |                   |
| Not available in area/transport problems                                                                                                                                                                                                         | 30.6                                    | 48.2                            | 0                                    |                   |
| Did not know where to go for treatment                                                                                                                                                                                                           | 30.6                                    | 48.2                            | 0                                    |                   |
| Doctor did not know how to treat or provide care                                                                                                                                                                                                 | 14.4                                    | 13.6                            | 15.6                                 |                   |
| Child refused to go                                                                                                                                                                                                                              | 2.6                                     | 4.1                             | 0                                    |                   |
| Vaccine shortage                                                                                                                                                                                                                                 | 0                                       | 0                               | 0                                    |                   |
| Not convenient times/ could not get appointment                                                                                                                                                                                                  | 0                                       | 0                               | 0                                    |                   |
| No referral                                                                                                                                                                                                                                      | 0                                       | 0                               | 0                                    |                   |
| Lack of resources at school                                                                                                                                                                                                                      | 0                                       | 0                               | 0                                    |                   |
| Other                                                                                                                                                                                                                                            | 27.7                                    | 3.7                             | 69.4                                 | ★                 |

**Mental Health Care**

| <b>Children Over Age 1 Year</b>                                            | <b>All Children</b><br>(N=273,648)<br>% | <b>CSHCN</b><br>(N=42,457)<br>% | <b>Not CSHCN</b><br>(N=231,191)<br>% | <b>Sig. Diff.</b> |
|----------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Child received mental health care or counseling, during the past 12 months | 6.2                                     | 26.5                            | 2.5                                  | ★                 |

**Dental Care**

| <b>Children Over Age 1 Year</b>                                                                                                                                                                      | <b>All Children</b><br>(N=275,186)<br>% | <b>CSHCN</b><br>(N=42,785)<br>% | <b>Not CSHCN</b><br>(N=232,401)<br>% | <b>Sig. Diff.</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Child saw a dentist (including orthodontist, oral surgeon, or other dental specialist) for routine preventive dental care (including check-ups, screenings, and sealants), during the past 12 months | 77.7                                    | 82.7                            | 76.7                                 |                   |
| Child did not receive all needed routine preventive dental care, during the past 12 months                                                                                                           | 2.7                                     | 4.6                             | 2.4                                  |                   |
| <i>Children not receiving needed dental care</i><br>Reasons for not getting needed dental care:                                                                                                      | (N=7,466)                               | (N=1,972)                       | (N=5,494)                            |                   |
| Not convenient times/ could not get appointment                                                                                                                                                      | 28.7                                    | 30.1                            | 28.1                                 | ★                 |
| No insurance                                                                                                                                                                                         | 17.7                                    | 27.9                            | 14.0                                 |                   |
| Cost too much                                                                                                                                                                                        | 17.1                                    | 44.3                            | 7.3                                  |                   |
| Can't find dentist who accepts child's insurance                                                                                                                                                     | 9.3                                     | 9.0                             | 9.4                                  |                   |
| Lack of resources at school                                                                                                                                                                          | 7.1                                     | 2.4                             | 8.8                                  |                   |
| Health plan problem                                                                                                                                                                                  | 6.9                                     | 8.1                             | 6.5                                  |                   |
| Dentist did not know how to treat or provide care                                                                                                                                                    | 6.7                                     | 0                               | 9.1                                  |                   |
| Child refused to go                                                                                                                                                                                  | 6.0                                     | 3.2                             | 7.1                                  |                   |
| Treatment is ongoing                                                                                                                                                                                 | 5.2                                     | 9.5                             | 3.6                                  |                   |
| Not available in area/transport problems                                                                                                                                                             | 4.3                                     | 8.1                             | 2.9                                  |                   |
| Dissatisfaction with dentist                                                                                                                                                                         | 2.2                                     | 8.2                             | 0                                    |                   |
| Did not know where to go for treatment                                                                                                                                                               | 0.6                                     | 0                               | 0.8                                  |                   |
| No referral                                                                                                                                                                                          | 0                                       | 0                               | 0                                    |                   |
| Other                                                                                                                                                                                                | 0                                       | 0                               | 0                                    |                   |

**Prescription Medication**

| <b>Children Age 0-17 Years</b>                                                                                              | <b>All Children</b><br>(N=296,099)<br>% | <b>CSHCN</b><br>(N=44,310)<br>% | <b>Not CSHCN</b><br>(N=251,789)<br>% | <b>Sig. Diff.</b> |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| Child used prescription medication, during past 12 months                                                                   | 53.8                                    | 93.8                            | 46.7                                 | ★                 |
| Child did not receive all needed prescription medication, during the past 12 months                                         | (N=159,255)<br>0.6                      | (N=41,559)<br>0.6               | (N=117,697)<br>0.6                   |                   |
| <i>Children not receiving needed prescription medication</i><br>Reasons for not getting the needed prescription medication: | (N=937)                                 | (N=232)                         | (N=705)                              |                   |
| Cost too much                                                                                                               | 4.8                                     | 19.6                            | 0                                    |                   |
| No insurance                                                                                                                | 33.8                                    | 19.6                            | 38.5                                 |                   |
| Doctor did not know how to treat or provide care                                                                            | 19.9                                    | 80.4                            | 0                                    |                   |
| Treatment is ongoing                                                                                                        | 18.9                                    | 0                               | 25.1                                 |                   |
| Health plan problem                                                                                                         | 13.3                                    | 0                               | 17.7                                 |                   |
| Can't find doctor who accepts child's insurance                                                                             | 0                                       | 0                               | 0                                    |                   |
| Not available in area/transport problems                                                                                    | 0                                       | 0                               | 0                                    |                   |
| Not convenient times/ could not get appointment                                                                             | 0                                       | 0                               | 0                                    |                   |
| Dissatisfaction with doctor                                                                                                 | 0                                       | 0                               | 0                                    |                   |
| Did not know where to go for treatment                                                                                      | 0                                       | 0                               | 0                                    |                   |
| Child refused to go                                                                                                         | 0                                       | 0                               | 0                                    |                   |
| No referral                                                                                                                 | 0                                       | 0                               | 0                                    |                   |
| Lack of resources at school                                                                                                 | 0                                       | 0                               | 0                                    |                   |
| Other                                                                                                                       | 2.2                                     | 9.0                             | 0                                    |                   |

**Medical Home**

| <b>Children Age 0-17 Years</b>                                                                                                                                                                                                                               | <b>All Children %</b> | <b>CSHCN %</b>      | <b>Not CSHCN %</b>  | <b>Sig. Diff.</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|---------------------|-------------------|
| <i>All children</i><br>Child has a personal doctor or nurse (health professional who knows child well and is familiar with child's health history, who can be a general doctor, pediatrician, specialist doctor, nurse practitioner, or physician assistant) | (N=296,099)<br>84.6   | (N=44,310)<br>88.7  | (N=251,789)<br>83.9 |                   |
| <i>Children who have a personal doctor or nurse</i><br>Child's personal doctor or nurse usually/always spent enough time with child                                                                                                                          | (N=250,459)<br>74.6   | (N=39,287)<br>79.1  | (N=211,172)<br>73.8 |                   |
| Child's personal doctor or nurse usually/always explained things in a way that family/child can understand                                                                                                                                                   | 92.0                  | 93.4                | 91.7                |                   |
| Child visited his/her personal doctor or nurse for preventive care (such as well-child check-up, routine physical exam, immunization, health screening), during past 12 months                                                                               | 77.2                  | 84.2                | 75.9                | ★                 |
| <b>Immediate Help Or Care</b>                                                                                                                                                                                                                                |                       |                     |                     |                   |
| <i>Families needing help or advice</i><br>Family usually/always got the help or advice needed, when family called child's personal doctor or nurse over the phone                                                                                            | (N=87,130)<br>92.7    | (N=20,772)<br>98.2  | (N=66,358)<br>91.0  |                   |
| <i>Children needing immediate care from personal doctor/nurse</i><br>Child usually/always got care from his/her personal doctor or nurse as soon as wanted, when care was needed right away for an illness or injury                                         | (N=58,741)<br>92.0    | (N=13,970)<br>90.6  | (N=44,771)<br>92.5  |                   |
| <b>Specialist Care</b>                                                                                                                                                                                                                                       |                       |                     |                     |                   |
| <i>Children who have a personal doctor or nurse</i><br>Child's personal doctor or nurse thought child needed to see a specialist doctor(s)                                                                                                                   | (N=250,459)<br>19.4   | (N=250,459)<br>52.8 | (N=211,172)<br>13.2 | ★                 |
| <i>Children needing specialist care</i><br>Family had a moderate/big problem getting care from specialist doctor(s) when needed.                                                                                                                             | (N=48,543)<br>14.1    | (N=20,730)<br>14.2  | (N=27,813)<br>14.0  |                   |
| Child's personal doctor, nurse, or office staff helped family to get care from specialist doctor(s)                                                                                                                                                          | 77.3                  | 83.1                | 73.0                |                   |
| Child's personal doctor or nurse usually/always talked with family about visits to specialist doctor(s)                                                                                                                                                      | 61.8                  | 63.5                | 60.5                |                   |
| <b>Special Services</b>                                                                                                                                                                                                                                      |                       |                     |                     |                   |
| <i>Children who have a personal doctor or nurse</i><br>Child needed special services, equipment, or other health care (such as physical therapy, wheelchairs, special education services, counseling), during the past 12 months                             | (N=250,459)<br>8.3    | (N=39,287)<br>34.5  | (N=211,172)<br>3.4  | ★                 |
| <i>Children needing special services</i><br>Family had a moderate/big problem getting special services, equipment, or other care when needed                                                                                                                 | (N=20,729)<br>12.2    | (N=13,569)<br>16.0  | (N=7,160)<br>5.0    |                   |
| Child's personal doctor or nurse helped family to get the special care or equipment that child needed                                                                                                                                                        | 71.6                  | 73.6                | 68.0                |                   |
| Child's personal doctor or nurse usually/always talked with family about the child's special care or equipment                                                                                                                                               | 57.2                  | 56.6                | 58.3                |                   |
| <b>Interpreter Services</b>                                                                                                                                                                                                                                  |                       |                     |                     |                   |
| <i>Children whose primary language is not English</i><br>Child/family needed an interpreter to help speak with his/her doctors or nurses                                                                                                                     | (N=17,395)<br>5.7     | (N=1,143)<br>31.7   | (N=16,252)<br>3.8   | ★                 |
| <i>Families needing an interpreter</i><br>Child/family were able to usually/always get someone other than a family member to help speak with doctors or nurses                                                                                               | (N=989)<br>71.0       | (N=362)<br>100.0    | (N=627)<br>54.2     |                   |

**Young Children Age 0-5 Years**

| <b>Children Age 0-5 Years</b>                                                                                                                                     | <b>All Children</b><br>(N=101,853)<br>% | <b>CSHCN</b><br>(N=11,722)<br>% | <b>Not CSHCN</b><br>(N=90,132)<br>% | <b>Sig.<br/>Diff.</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|-------------------------------------|-----------------------|
| <b><i>Learning, Development, or Behavioral Concerns</i></b>                                                                                                       |                                         |                                 |                                     |                       |
| Family has concerns about child's learning, development, or behavior                                                                                              | 7.0                                     | 20.6                            | 5.2                                 |                       |
| <i>Children age 4-9 months</i>                                                                                                                                    | (N=11,349)                              | (N=1,194)                       | (N=10,155)                          |                       |
| Family has a lot of concerns about how child:                                                                                                                     |                                         |                                 |                                     |                       |
| Makes speech sounds                                                                                                                                               | 8.2                                     | 0                               | 9.2                                 |                       |
| Understands what family says                                                                                                                                      | 9.8                                     | 0                               | 11.0                                |                       |
| Uses his/her hands and fingers to do things                                                                                                                       | 17.5                                    | 57.6                            | 12.8                                |                       |
| Uses his/her arms and legs                                                                                                                                        | 17.5                                    | 57.6                            | 12.8                                |                       |
| <i>Children age 10-17 months</i>                                                                                                                                  | (N=13,159)                              | (N=1,159)                       | (N=12,000)                          |                       |
| Family has a lot of concerns about how child:                                                                                                                     |                                         |                                 |                                     |                       |
| Talks and makes speech sounds                                                                                                                                     | 5.8                                     | 39.1                            | 2.6                                 |                       |
| Understands what family says                                                                                                                                      | 9.4                                     | 58.3                            | 4.7                                 | ★                     |
| Uses his/her hands and fingers to do things                                                                                                                       | 10.0                                    | 39.0                            | 7.2                                 | ★                     |
| Uses his/her arms and legs                                                                                                                                        | 9.1                                     | 35.7                            | 6.5                                 |                       |
| Behaves                                                                                                                                                           | 7.9                                     | 32.2                            | 5.6                                 |                       |
| Gets along with others                                                                                                                                            | 6.7                                     | 28.3                            | 4.7                                 |                       |
| Is learning to do things for him/herself                                                                                                                          | 7.8                                     | 28.3                            | 5.8                                 |                       |
| <i>Children age 18-71 months</i>                                                                                                                                  | (N=70,856)                              | (N=9,038)                       | (N=61,818)                          |                       |
| Family has a lot of concerns about how child:                                                                                                                     |                                         |                                 |                                     |                       |
| Talks and makes speech sounds                                                                                                                                     | 6.7                                     | 6.1                             | 6.7                                 |                       |
| Understands what family says                                                                                                                                      | 8.2                                     | 4.8                             | 8.7                                 |                       |
| Uses his/her hands and fingers to do things                                                                                                                       | 8.0                                     | 4.2                             | 8.6                                 |                       |
| Uses his/her arms and legs                                                                                                                                        | 7.5                                     | 10.0                            | 7.2                                 |                       |
| Behaves                                                                                                                                                           | 8.8                                     | 16.8                            | 7.7                                 |                       |
| Gets along with others                                                                                                                                            | 8.0                                     | 8.9                             | 8.0                                 |                       |
| Is learning to do things for him/herself                                                                                                                          | 8.0                                     | 4.8                             | 8.5                                 |                       |
| Is learning preschool or school skills                                                                                                                            | 9.2                                     | 13.5                            | 8.6                                 |                       |
| <b><i>Medical Home</i></b>                                                                                                                                        |                                         |                                 |                                     |                       |
| <i>Children age 0-5 who saw doctors during past 12 months</i>                                                                                                     | (N=92,925)                              | (N=11,234)                      | (N=91,691)                          |                       |
| Child's doctors or other health care professionals asked if family had concerns about child's learning, development, or behavior                                  | 43.4                                    | 58.8                            | 41.2                                |                       |
| <i>Children age 0-5 with concerns who saw doctors during past 12 months</i>                                                                                       | (N=16,612)                              | (N=4,724)                       | (N=11,889)                          |                       |
| Child's doctors or other health care professionals gave family specific information to address family's concerns about child's learning, development, or behavior | 46.1                                    | 51.7                            | 43.8                                |                       |
| <b><i>Early Care and Education</i></b>                                                                                                                            |                                         |                                 |                                     |                       |
| During the past month, child regularly attended:                                                                                                                  |                                         |                                 |                                     |                       |
| Child care center                                                                                                                                                 | 28.6                                    | 45.2                            | 26.5                                |                       |
| Family-based child care outside of home                                                                                                                           | 26.9                                    | 37.1                            | 25.6                                |                       |
| Child care in family's home provided by a nanny or relative other than a parent or guardian                                                                       | 24.5                                    | 16.0                            | 25.6                                |                       |
| Head Start or Early Start program                                                                                                                                 | 10.1                                    | 12.2                            | 9.8                                 |                       |
| <i>Children age 36 months and older</i>                                                                                                                           | (N=51,784)                              | (N=6,092)                       | (N=45,692)                          |                       |
| Nursery school, preschool, or kindergarten                                                                                                                        | 63.1                                    | 79.0                            | 61.0                                |                       |

| <b>Children Age 0-5 Years</b>                                                                                                                                                               | <b>All Children</b><br>(N=101,853)<br>% | <b>CSHCN</b><br>(N=11,722)<br>% | <b>Not CSHCN</b><br>(N=90,132)<br>% | <b>Sig.<br/>Diff.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|-------------------------------------|-----------------------|
| <b><i>Early Care and Education (continued)</i></b>                                                                                                                                          |                                         |                                 |                                     |                       |
| During the past month, family has had to make different arrangements for childcare at the last minute because family's usual plans changed due to circumstances beyond the family's control | 99.7                                    | 100.0                           | 99.7                                |                       |
| During the past month, someone in the family had to quit a job, not take a job, or greatly changed his/her job because of problems with childcare                                           | 89.6                                    | 85.4                            | 90.1                                |                       |
| <b><i>Injury</i></b>                                                                                                                                                                        |                                         |                                 |                                     |                       |
| Child was injured and required medical attention (includes emergency room visits, doctor's attention, care administered by parent), during the past 12 months                               | 7.9                                     | 9.6                             | 7.7                                 |                       |
| <i>Children who were injured</i><br>Where child was injured:                                                                                                                                | (N=8,081)                               | (N=1,127)                       | (N=6,954)                           |                       |
| At home                                                                                                                                                                                     | 61.9                                    | 69.4                            | 60.6                                |                       |
| At child care                                                                                                                                                                               | 11.1                                    | 0                               | 12.9                                |                       |
| In some other place                                                                                                                                                                         | 29.9                                    | 30.6                            | 29.7                                |                       |
| <b><i>Poisoning</i></b>                                                                                                                                                                     |                                         |                                 |                                     |                       |
| Child was poisoned by accident and required medical attention (includes emergency room visits, doctor's attention, care administered by parent), during past 12 months                      | 0.3                                     | 0.3                             | 0.2                                 |                       |
| <i>Children who were poisoned</i><br>Child was poisoned at home                                                                                                                             | (N=263)<br>100                          | (N=40)<br>100                   | (N=223)<br>100                      |                       |
| <b><i>Breast-Feeding</i></b>                                                                                                                                                                |                                         |                                 |                                     |                       |
| Child has breastfed or been fed breast milk                                                                                                                                                 | 81.0                                    | 69.2                            | 82.5                                |                       |
| <b><i>Reading to Child</i></b>                                                                                                                                                              |                                         |                                 |                                     |                       |
| Number of days that family members read stories to child, during the past week                                                                                                              |                                         |                                 |                                     |                       |
| 0-1 days                                                                                                                                                                                    | 7.9                                     | 8.5                             | 7.8                                 |                       |
| 2-3 days                                                                                                                                                                                    | 21.4                                    | 16.1                            | 22.1                                |                       |
| 4-5 days                                                                                                                                                                                    | 13.2                                    | 17.9                            | 12.6                                |                       |
| 6-7 days                                                                                                                                                                                    | 57.4                                    | 57.5                            | 57.4                                |                       |



**Children & Youth Age 6-17 Years**

| <b>Children Age 6-17 Years</b>                                                                                                                           | <b>All Children</b><br>(N=194,246)<br>% | <b>CSHCN</b><br>(N=32,588)<br>% | <b>Not CSHCN</b><br>(N=161,657)<br>% | <b>Sig. Diff.</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| <b><i>School</i></b>                                                                                                                                     |                                         |                                 |                                      |                   |
| During the 12 months, child was:                                                                                                                         |                                         |                                 |                                      |                   |
| Enrolled in public school                                                                                                                                | 78.6                                    | 76.7                            | 78.9                                 |                   |
| Enrolled in private school                                                                                                                               | 18.8                                    | 19.8                            | 18.6                                 |                   |
| Home-schooled                                                                                                                                            | 2.5                                     | 3.3                             | 2.3                                  |                   |
| Not enrolled in school                                                                                                                                   | 0.1                                     | 0.2                             | 0.1                                  |                   |
| Child/youth missed 11 or more days of school due to illness or injury, during past 12 months                                                             | 4.3                                     | 11.3                            | 2.9                                  | ★                 |
| <i>Children enrolled in school</i>                                                                                                                       | (N=189,324)                             | (N=31,450)                      | (N=157,874)                          |                   |
| Child/youth's school contacted family two or more times about child's problems with school, during past 12 months                                        | 16.2                                    | 36.0                            | 12.3                                 | ★                 |
| Starting with kindergarten, child/youth has repeated grades                                                                                              | 7.3                                     | 14.3                            | 5.9                                  | ★                 |
| <b><i>School/Community Activities</i></b>                                                                                                                |                                         |                                 |                                      |                   |
| Child/youth was on a sports team or took sports lessons after school or on weekends, during past 12 months                                               | 62.6                                    | 54.2                            | 64.3                                 |                   |
| Child/youth participated in clubs or organizations (such as Scouts, religious group, Boys/Girls club) after school or on weekends, during past 12 months | 49.0                                    | 53.9                            | 48.0                                 |                   |
| Child/youth participated in other organized events or activities, during past 12 months                                                                  | 6.4                                     | 7.4                             | 6.2                                  |                   |
| <b><i>Family Participation In Child/Youth's Activities</i></b>                                                                                           |                                         |                                 |                                      |                   |
| <i>Children participating in events or activities</i>                                                                                                    | (N=159,985)                             | (N=26,339)                      | (N=133,646)                          |                   |
| Family attended events or activities that child and his/her friends participated in, during the past 12 months:                                          |                                         |                                 |                                      |                   |
| Always / usually                                                                                                                                         | 73.4                                    | 72.1                            | 73.6                                 |                   |
| Sometimes / never                                                                                                                                        | 26.5                                    | 27.8                            | 26.3                                 |                   |
| <b><i>Family Meeting Child/Youth's Friends</i></b>                                                                                                       |                                         |                                 |                                      |                   |
| Family has met:                                                                                                                                          |                                         |                                 |                                      |                   |
| All or most of child/youth's friends                                                                                                                     | 75.1                                    | 76.7                            | 74.9                                 |                   |
| Some or none of child/youth's friends                                                                                                                    | 24.4                                    | 22.7                            | 24.8                                 |                   |
| <b><i>Supervision of Children</i></b>                                                                                                                    |                                         |                                 |                                      |                   |
| <i>Children under age 12 years</i>                                                                                                                       | (N=93,881)                              | (N=14,447)                      | (N=79,434)                           |                   |
| Child spent time caring for him/herself either at home or elsewhere, without an older person responsible for them                                        | 21.9                                    | 25.4                            | 21.2                                 |                   |
| <b><i>Youth Service Or Work</i></b>                                                                                                                      |                                         |                                 |                                      |                   |
| <i>Children age 12 years and older</i>                                                                                                                   | (N=100,365)                             | (N=18,141)                      | (N=82,224)                           |                   |
| Youth was involved in community service or volunteer work at school, church, or in the community, during past 12 months                                  | 67.2                                    | 64.5                            | 67.8                                 |                   |
| Youth has worked for pay                                                                                                                                 | 15.8                                    | 15.7                            | 14.8                                 |                   |
| <b><i>Sleep</i></b>                                                                                                                                      |                                         |                                 |                                      |                   |
| Number of nights that child/youth got enough sleep for his/her age, during the past week:                                                                |                                         |                                 |                                      |                   |
| 0-1 nights                                                                                                                                               | 2.1                                     | 3.1                             | 1.9                                  |                   |
| 2-3 nights                                                                                                                                               | 4.6                                     | 4.8                             | 4.5                                  |                   |
| 4-5 nights                                                                                                                                               | 14.8                                    | 11.9                            | 15.4                                 |                   |
| 6-7 nights                                                                                                                                               | 77.5                                    | 79.4                            | 77.2                                 |                   |

| <b>Children Age 6-17 Years</b>                                                                                                                                         | <b>All Children</b><br>(N=194,246)<br>% | <b>CSHCN</b><br>(N=32,588)<br>% | <b>Not CSHCN</b><br>(N=161,657)<br>% | <b>Sig. Diff.</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| <b><i>Physical activity</i></b>                                                                                                                                        |                                         |                                 |                                      |                   |
| Number of days that child/youth exercised or participated in physical activity for at least 20 minutes that made him/her sweat and breathe hard, during the past week: |                                         |                                 |                                      |                   |
| 0-1 days                                                                                                                                                               | 13.2                                    | 18.9                            | 12.1                                 |                   |
| 2-3 days                                                                                                                                                               | 25.1                                    | 22.0                            | 25.8                                 |                   |
| 4-5 days                                                                                                                                                               | 28.5                                    | 22.3                            | 29.7                                 |                   |
| 6-7 days                                                                                                                                                               | 33.1                                    | 36.7                            | 32.4                                 |                   |
| Child/youth has ridden a bike, scooter, skateboard, roller skates, or rollerblades, during the past 12 months                                                          | 73.5                                    | 73.5                            | 73.5                                 |                   |
| <i>Child/youth riding a bike, scooter, skateboard, roller skates, or rollerblades</i>                                                                                  | (N=142,528)                             | (N=23,772)                      | (N=118,756)                          |                   |
| Child/youth usually/always wears a helmet                                                                                                                              | 54.1                                    | 58.8                            | 53.2                                 |                   |
| <b><i>Reading</i></b>                                                                                                                                                  |                                         |                                 |                                      |                   |
| <i>Children enrolled in school</i>                                                                                                                                     | (N=159,382)                             | (N=24,756)                      | (N=134,626)                          |                   |
| Child/youth spends time reading (or is read to by someone else) for pleasure                                                                                           | 96.2                                    | 94.9                            | 96.5                                 |                   |
| <b><i>Computer, TV, Video Games</i></b>                                                                                                                                |                                         |                                 |                                      |                   |
| Child/youth uses a computer for purposes other than schoolwork, on an average school day                                                                               | 63.5                                    | 64.7                            | 63.3                                 |                   |
| Child/youth usually watches TV, watch videos, or play video games, on an average school day                                                                            | 79.6                                    | 78.3                            | 79.9                                 |                   |
| Family has rules about what television programs the child/youth is allowed to watch                                                                                    | 80.4                                    | 82.8                            | 80.0                                 |                   |
| <b><i>Family Thoughts About Child/Youth</i></b>                                                                                                                        |                                         |                                 |                                      |                   |
| Family currently has a lot of concerns about child/youth:                                                                                                              |                                         |                                 |                                      |                   |
| Child/youth's achievement                                                                                                                                              | 47.3                                    | 51.8                            | 46.4                                 |                   |
| Having enough time with child/youth                                                                                                                                    | 42.6                                    | 43.4                            | 42.4                                 |                   |
| Family's relationship with child/youth                                                                                                                                 | 42.2                                    | 42.5                            | 42.2                                 |                   |
| Child/youth's self-esteem                                                                                                                                              | 39.5                                    | 41.0                            | 39.2                                 |                   |
| Child/youth's coping with stressful things                                                                                                                             | 37.8                                    | 44.8                            | 36.4                                 |                   |
| Learning difficulties                                                                                                                                                  | 27.6                                    | 38.2                            | 25.5                                 | ★                 |
| Depression or anxiety                                                                                                                                                  | 22.5                                    | 34.1                            | 20.1                                 | ★                 |
| Substance abuse                                                                                                                                                        | 23.9                                    | 24.8                            | 23.7                                 |                   |
| Violence in home, school, or neighborhood                                                                                                                              | 22.0                                    | 17.3                            | 22.4                                 |                   |
| Being "bullied" by classmates                                                                                                                                          | 20.1                                    | 22.9                            | 19.5                                 |                   |
| Eating disorders                                                                                                                                                       | 15.9                                    | 18.8                            | 15.3                                 |                   |
| Family says child/youth during past month usually/always:                                                                                                              |                                         |                                 |                                      |                   |
| Argues too much                                                                                                                                                        | 15.0                                    | 26.3                            | 12.8                                 | ★                 |
| Bullies, or is cruel or mean to others                                                                                                                                 | 1.9                                     | 4.5                             | 1.4                                  |                   |
| Shows respect for teachers and neighbors                                                                                                                               | 89.6                                    | 83.9                            | 90.7                                 |                   |
| Gets along well with other children                                                                                                                                    | 91.0                                    | 82.3                            | 92.8                                 | ★                 |
| Is disobedient                                                                                                                                                         | 3.8                                     | 6.6                             | 3.3                                  |                   |
| Is stubborn, sullen, or irritable                                                                                                                                      | 7.4                                     | 16.8                            | 5.5                                  | ★                 |
| Tries to understand other people's feelings                                                                                                                            | 70.7                                    | 65.7                            | 71.7                                 |                   |
| Tries to resolve conflict with classmates, family, friends                                                                                                             | 64.0                                    | 58.3                            | 65.1                                 |                   |
| Feels worthless or inferior                                                                                                                                            | 2.1                                     | 2.8                             | 2.0                                  |                   |
| Is unhappy, sad, or depressed                                                                                                                                          | 1.6                                     | 2.6                             | 1.4                                  |                   |
| Is withdrawn, and does not get involved with others                                                                                                                    | 1.8                                     | 2.5                             | 1.6                                  |                   |

**Family**

| <b>Children Age 0-17 Years</b>                                                                                           | <b>All Children</b><br>(N=295,273)<br>% | <b>CSHCN</b><br>(N=44,310)<br>% | <b>Not CSHCN</b><br>(N=250,963)<br>% | <b>Sig. Diff.</b> |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-------------------|
| <i>Children age 0-5 years</i>                                                                                            | (N=101,853)                             | (N=11,722)                      | (N=90,132)                           |                   |
| Number of times in the past week that family took child/youth on an outing, such as to the park, library, zoo, shopping: |                                         |                                 |                                      |                   |
| None                                                                                                                     | 3.1                                     | 0                               | 3.2                                  |                   |
| 1-5 times                                                                                                                | 66.6                                    | 71.5                            | 65.9                                 |                   |
| 6-10 times                                                                                                               | 27.8                                    | 26.4                            | 28.0                                 |                   |
| 11 or more times                                                                                                         | 2.5                                     | 2.0                             | 2.6                                  |                   |
| Number of days in the past week that all family members in the household ate a meal together:                            |                                         |                                 |                                      |                   |
| 0-1 days                                                                                                                 | 8.3                                     | 10.4                            | 7.9                                  |                   |
| 2-3 days                                                                                                                 | 13.3                                    | 12.3                            | 13.4                                 |                   |
| 4-5 days                                                                                                                 | 18.5                                    | 16.5                            | 18.8                                 |                   |
| 6-7 days                                                                                                                 | 59.9                                    | 60.7                            | 59.7                                 |                   |
| Child/youth attends religious service at least once per week                                                             | 51.4                                    | 51.9                            | 51.4                                 |                   |
| <i>Children age 6 years and older</i>                                                                                    | (N=194,047)                             | (N=32,588)                      | (N=161,458)                          |                   |
| Family's relationship with child is very close                                                                           | 83.9                                    | 77.0                            | 85.2                                 |                   |
| Family and child share ideas or talk very well about things that really matter                                           | 74.1                                    | 67.3                            | 75.4                                 |                   |
| Family is coping very well with day-to-day demands of parenthood/raising a child                                         | 58.6                                    | 42.2                            | 61.4                                 | ★                 |
| Family usually/always felt, during past month:                                                                           |                                         |                                 |                                      |                   |
| Child is harder to care for than most children that age                                                                  | 6.3                                     | 10.7                            | 5.5                                  |                   |
| Child does things that really bothers the family a lot                                                                   | 4.1                                     | 9.5                             | 3.2                                  |                   |
| They were giving up more of their life to meet child's needs than expected                                               | 12.3                                    | 17.1                            | 11.5                                 |                   |
| Angry with child                                                                                                         | 2.7                                     | 6.1                             | 2.1                                  |                   |
| Family has someone that they can turn to for day-to-day emotional help with parenthood/raising children                  | 89.8                                    | 90.0                            | 89.7                                 |                   |
| When there is a serious disagreement with other household members, a family member's response is to usually/always:      |                                         |                                 |                                      |                   |
| Keep opinions to oneself                                                                                                 | 41.6                                    | 46.1                            | 40.8                                 |                   |
| Discuss disagreements calmly                                                                                             | 65.9                                    | 69.7                            | 65.3                                 |                   |
| Argue heatedly or shout                                                                                                  | 38.2                                    | 44.3                            | 37.2                                 |                   |
| Hit or throw things                                                                                                      | 4.1                                     | 4.0                             | 4.2                                  |                   |
| Parents:                                                                                                                 | (N=294,424)                             | (N=44,310)                      | (N=250,114)                          |                   |
| Two parents (biological/adopted)                                                                                         | 66.6                                    | 59.3                            | 67.9                                 |                   |
| Two parent stepfamily                                                                                                    | 6.4                                     | 7.6                             | 6.2                                  |                   |
| Single mother, no father present                                                                                         | 21.8                                    | 27.8                            | 20.8                                 |                   |
| Other                                                                                                                    | 5.1                                     | 6.3                             | 5.1                                  |                   |
| Child's mother <sup>1</sup> in the household:                                                                            | (N=276,572)                             | (N=41,604)                      | (N=234,968)                          |                   |
| General health is good/excellent                                                                                         | 93.2                                    | 86.1                            | 94.5                                 | ★                 |
| Mental & emotional health is good/excellent                                                                              | 95.3                                    | 87.7                            | 96.6                                 | ★                 |
| Child's father <sup>2</sup> in the household:                                                                            | (N=223,764)                             | (N=30,906)                      | (N=192,858)                          |                   |
| General health is good/excellent                                                                                         | 94.9                                    | 90.3                            | 95.6                                 |                   |
| Mental & emotional health is good/excellent                                                                              | 96.6                                    | 94.6                            | 96.9                                 |                   |

<sup>1</sup> Mother = biological, step-, foster, or adoptive mother<sup>2</sup> Father = biological, step-, foster, or adoptive father

**Neighborhood**

| <b>Children Age 0-17 Years</b>                                                                                   | <b>All Children</b><br>(N=293,955)<br>% | <b>CSHCN</b><br>(N=44,264)<br>% | <b>Not CSHCN</b><br>(N=249,691)<br>% | <b>Sig.<br/>Diff.</b> |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|--------------------------------------|-----------------------|
| Families definitely/somewhat agree that:                                                                         |                                         |                                 |                                      |                       |
| "People in this neighborhood help each other out."                                                               | 85.6                                    | 86.9                            | 85.4                                 |                       |
| "We watch for each other's children in this neighborhood."                                                       | 86.1                                    | 85.5                            | 86.2                                 |                       |
| "There are people I can count on in this neighborhood."                                                          | 87.5                                    | 90.2                            | 87.0                                 |                       |
| "There are people in this neighborhood who might be a bad influence on my child/children."                       | 51.4                                    | 58.1                            | 50.2                                 |                       |
| "If my child were outside playing and got hurt or scared, there are adults nearby who I trust to help my child." | 90.7                                    | 93.6                            | 90.2                                 |                       |
| Family usually/always feels that their child is safe in their community or neighborhood.                         | 81.4                                    | 80.1                            | 81.7                                 |                       |
| <i>Children age 6 years and older, in school</i>                                                                 | <i>(N=187,485)</i>                      | <i>(N=31,404)</i>               | <i>(N=156,081)</i>                   |                       |
| Family usually/always feels that their child is safe at school                                                   | 87.3                                    | 88.8                            | 87.0                                 |                       |
| Family usually/always feels that their child is safe at home                                                     | 97.2                                    | 96.5                            | 97.3                                 |                       |

**Hawaii CSHCN Prevalence from Two Surveys**

|                                                                                                                              | <b>National Survey of<br/>of CSHCN (2001)</b> | <b>National Survey of<br/>Children's Health (2003)</b> |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------|
| <b>Hawaii</b>                                                                                                                |                                               |                                                        |
| CSHCN prevalence                                                                                                             | <b>11.0%</b><br>32,500 CSHCN                  | <b>15.0%</b><br>44,310 CSHCN                           |
| CSHCN, who have a medical, behavioral, or other health condition that has lasted or is expected to last 12 months or longer: |                                               |                                                        |
| Need or use medicine prescribed by a doctor                                                                                  | 69.3 %                                        | 69.6%                                                  |
| Need or use more medical, mental health, or educational services than is usual for most children of the same age             | 45.5%                                         | 38.9%                                                  |
| Limited or prevented in his/her ability to do things most children of the same age can do                                    | 28.8%                                         | 28.3%                                                  |
| Need or get special therapy, such as physical, occupational or speech therapy                                                | 21.0%                                         | 21.3%                                                  |
| Has emotional, developmental or behavioral problem that lasted or is expected to last 12 months or longer                    | 14.1%                                         | 14.6%                                                  |
| <b>U.S. Comparison</b>                                                                                                       |                                               |                                                        |
| CSHCN prevalence                                                                                                             | <b>12.8%</b>                                  | <b>17.6 %</b>                                          |

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